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Principles of Institutional Economics

-with Applications to Cooperative Enterprises

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Abstract: The study examines exchange in economic systems (marketing systems). It starts from economic coordination, coordination of individual decisions that produce a good or service for customers according to their preferences. The starting point is economic interdependence, the situation where all the economic actors are mutually dependent on each other having coinciding or conflicting interests with respect to scarce resources. Economic interdependence is the origin of transaction costs.

Economic behavior takes place within a certain set of rules, institutions. Institutions define whose interests as buyers or sellers are taken into account and how. By altering the institutional setting, the performance of the economic system can be modified.

Total costs of a good consist of production and transaction costs. Transaction Cost Economics argues that the modification of institutions affects especially transaction costs. Marketing system's institutional design is a significant means of economizing transaction costs.

Markets and internal transactions may be regarded as alternative coordination modes. The question when to buy a good in the markets or when to make that good itself (the transaction in the hierarchy) is examined. Especially the influence of dimensions of transactions, asset specificity, uncertainty, frequency and externalities are discussed.

Cooperatives are special kinds of institutions having characteristics of both the market and hierarchical coordination. Several characteristics of cooperatives in the light of Transaction Cost Economics are presented.

Index Words: Institutional economics, economic coordination, marketing systems, transaction costs, cooperatives.

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1. Introduction

Institutional economics is attempting to study economic phenomena as they appear in the real world. In that analysis institutional economics has been obliged to give up some of the simplifications that have made it possible for the traditional economic analysis to develop sophisticated mathematical and econometric methods.

Institutional economics is not new. However, it started to flourish in 1970's and 1980's when scholars as Cyert and March (1963) Simon (1972) and Williamson (1975) had published their studies. Those studies had all in common that they challenged basic assumptions of neoclassical economic theory, but at the same time they remained close enough to the main stream that mutual communication was still possible. These developments led to the birth of New Institutional Economics. The markets were not regarded as an autonomous structure but its performance as coordination mechanism could be affected. New Institutional Economics has also developed major intersections with other disciplines such as legal scholars, social scientists and management scientists (Menard 2004).

Since 1960's institutional economics has developed into a wide and varied body of literature including many sets of concepts, sometimes including little compatibility with each other. However, institutional economics has maintained its virility and has made considerable progress in developing its methodology.

Institutional economics has opened a totally new path for economic analysis of cooperatives. According to neoclassical economics all the transactions should take place in the markets, thus, leaving cooperatives no particular advantages compared to share companies. An often-heard statement is that cooperatives have become obsolete and will be transferred into share companies. However, in the real world many cooperatives have been extremely competitive. Institutional Economics provides new explanations into that.

Institutional Economics is a wide body of literature containing a variety of concepts and ideas of thought. Even the same concept may mean a different thing in another writing. This writing is trying to sort out and explain some of the most principal concepts used especially in New Institutional Economics (NIE).

There is a lack of suitable student text in institutional economics and its applications into cooperatives. This memorandum is an attempt to start filling this lack.

2. Economic Coordination and Institutional Economics

2.1. Economic Coordination

2.1.1. What do we mean by Coordination

Whenever numerous actions have to be taken to reach an outcome, coordination between these actions is required. A rowing team needs a mate to coordinate the timing, a choir needs a director and a musical score, and a business organization needs a manager and planning. The efforts of various individuals have to be integrated and synchronized.

As the number of parties involved in transactions increases, the transactions become more complex. Actually, the initial buyer and seller very seldom see each other for direct negotiations. The goods are often manufactured before the buying decision, and the price is set before the buyer even knows about the existence of the product.

What provides the coordination of these thousands of people working to complete their contribution perhaps years before the final outcome, the product, is consumed? How do they know what to do? How can they be sure that they are doing the right thing? Let us think about a loaf of bread. Before a consumer sees the loaf in a store, somebody has delivered it into the shop, baked it, ordered the flour from somewhere, which in turn has been milled by somebody and for which somebody has grown the grain. If the investments were considered, it would be easy to find hundreds of individual decisions some made many years before, to produce that particular loaf of bread.

How is it possible that all these individual decisions will produce a loaf of bread? How do these decision makers know about somebody's willingness to buy that particular loaf? That is the problem of (vertical) coordination of the exchange system.

As mentioned above, the neoclassical economic theory assumes that the price ("invisible hand") is able to carry all the information to act according to end customers' demand leading to so-called optimal allocation of resources. Indeed, in a world of no uncertainty and perfect knowledge this could be possible. However, if we allow various actors to make mistakes the allocation of resources will be a random table. In reality the allocation of resources is not a random table, but mostly far from "optimal".

All the parties involved in the decision examine the system as part of their own, individual opportunity sets[1]. That is why the parties have different needs and wants regarding the system. These needs can sometimes be in conflict with each other.

Marion (1976) defines coordination as a process by which various functions of a vertical value-adding system are brought into harmony. He presents the following questions as important for the coordination process:

[1] An opportunity set can be defined as the available lines of action open to an individual. The opportunity set of one person is shaped by the opportunities of others (Samuels 1972) and restricted by the resources to use the opportunities.

1. What is produced and marketed (quantity and quality)?
2. When is it produced and marketed?
3. Where is it produced and marketed?
4. How it is produced and marketed? (What is the efficient use of resources for completing the vertical value-adding task? Unnecessary or inefficient steps and cross-purpose work is eliminated or combined.)
5. What adjustments and adaptations are needed to respond promptly to changes in demand, new technology, or other shifts in profit incentives?

Marion includes two dimensions into the coordination process: a synchronizing dimension and an adapting dimension. The former considers coordination in the sense of fine-tuning the system by systemizing, routinizing and stabilizing various actors' activities and relationships. The aim is for all the steps in the production-distribution sequence to fit in smoothly with each other in an efficient way. This leads towards streamlined, efficient systems to satisfy short- and intermediate-period market demands. Such systems, however, may become relatively rigid and inflexible in a longer time horizon.

Coordination in an adaptation sense may involve quite different forces. It leads towards disrupting and remodeling an existing system so that it will be relevant in the long run. Thus, some outcomes of synchronizing decisions may be in conflict with the adapting dimension of coordination. Mechanisms that improve synchronization may stifle adaptation.

The first three points presented above refer mainly to the synchronization dimension of coordination, while the latter two refer more to the adapting dimension. This distinction can lead to two different parts of a continuum called coordination. The concentration on fine-tuning the system so that the parts match smoothly together may encourage one to forget when is is time to start thinking about the creation of a new and superior system.

The synchronization coordination would only be needed if the circumstances would be stable and without uncertainty. However, adaptation to new circumstances continuously tears apart synchronization. Coordination is a compromise between synchronization and adaptation coordination.

It is important to make the distinction between coordination as a process and the mechanisms, which influence that process. According to Marion (1976) there are four categories of decisions affecting sub-sector coordination. Besides these decisions there are factors beyond the control of sub-sector participants such as weather and foreign supply:

1. Incentives (economic incentives as reflected in prices, social incentives such as the relationship between the members of the system, security incentives, which encourage conventional behavior, etc.)
2. Flow of information (which affects the level of knowledge, the level of uncertainty and the communication of incen-tives).
3. Adequacy of necessary inputs to be able to respond to incentives (i.e., the extent to which decisions are severely restrained).
4. Management alertness and ability.

Examples about coordination mechanisms can be mentioned such arrangements and institutions as markets of all kinds, private treaties, vertical ownership, bargaining associations, market orders, information systems (including grades and standards), transportation services, credit services, governmental programs, trade associations, and cooperatives. Different coordination mechanisms can affect all the four aspects of decisions presented above, but in a different manner.

2.1.2. Levels and Modes of Coordination

Shaffer and Staatz (1985) define four levels of coordination:

1. Coordination within firms (micro-micro coordination).
2. Coordination between individual firms (micro coordination).
3. Coordination of total supply with total demand for com-modities or industries in each step of the production and distribution process (macro coordination).
4. Coordination of aggregate demand with aggregate supply for the economy as a whole (macro-macro coordination).

The analysis of coordination must include all these levels. The problems and mechanisms of coordination are interrelated between these levels and, thus, the governance structures of all the levels should be addressed in the examination of coordination problems.

2.1.3. Coordination and Integration

Integration of separable tasks into the same organization has been one way of coping with market imperfections. The coordination of certain activities can be assumed to improve through integration. Integration has become more important in modern corporations than before, e.g., because of the increased complexity and time span of production processes.

Vertical integration can be defined as the coordination of technically separable activities in the vertical sequence of production and distribution of products under the control of an organization by ownership. Among incentives for vertical integration are: (1) the reduction of production costs and cost of acquiring information; (2) solutions to problems involved in transactions across markets, problems of uncertainty, impacted information, opportunism, and externalities; and (3) economies of scale in allocating lumpy inputs over a set of activities. The growth goals of management may act as incentives for vertical integration. As an example of economies involved in vertical integration can be mentioned blast furnaces, converters and primary reduction mills in the steel industry in order to reduce handling and reheating (Scherer 1980, p.78).

Horizontal integration involves combining within one organization a number of technically separable production-distribution systems of the same product. Incentives of horizontal integration include a potential improvement in the match of supply with demand (macro coordination), potential market power, and generally improved ability to control the environment associated with the economies of scale.

Scope integration involves combining within one organization the production distribution of a number of products or services, which are technically separable. In-

centives for scope integration include potential for economic power, possible economies of scale, especially in selling, and reduction of the uncertainty of changing market conditions. Shaffer[2] states that few coordination benefits are apparent from scope integration per se. However, very large conglomerate firms may have the capacity to influence the system through the exercise of political and economic power

2.1.4. Preference Articulation

When all have different preferences, the rules of the system, i.e. the institutions, decide what preferences are taken into account and in what order. As a matter of fact, the particular exchange system is the means of articulating preferences. "The effectiveness of the food system as a mechanism for preference articulation is the key question about the system performance."(Shaffer 1980)

Market and government can be understood as alternative systems of preference articulation.[3]) Public discussion has many value-based arguments about the ability of either markets or government to articulate certain preferences. This discussion is often based on entirely different concepts concerning human beings.

Coordination is a special case of the problem of preference articulation. It can be defined as matching each step of the production-distribution sequence of a good with existing demand. This broadens the question of coordination also to the adjustment problems on the supply side. Modes of preference articulation will be discussed in section 3.2.

[2] Shaffer 1986, Thinking about Farmers' Cooperatives, Contracts and Economic Coordination, unpublished.

[3] "Government and markets are joint mechanisms for articulating preferences. Government produces the regulatory system shaping the opportunity set of firms and households. This determines what is to be taken into account by participants. The regulatory system sanctions a pattern of private power including facilitating and limiting collec-tive action. In this sense markets deal only with solved political problems, and the market is an instrument of the regulatory system." (Shaffer1980).

2.2. Economics and Institutions

2.2.1. Economic Interdependence

Economic analysis has been traditionally understood as analysis between individuals and goods. A person wants a good and informs the seller about the amount of money s/he is willing to pay for the ownership of that good. Supply and demand coincide.

Institutional economics concentrated on the analysis between individuals. Other persons' interests restrict one person's interest. When persons and their interests are dependent on each other we say that there exits an economic **interdependence** between those persons.

In the world of scarcity interests between persons may **conflict**. If we are many wanting to have the (only) sandwich available and I get the sandwich, the others remain hungry. According to what rule the conflict about the **ownership** of the sandwich will be decided. Who is most hungry? Who saw it first? Who pays most? Or will the sandwich be divided among parties? How large portions to each?

All the **rules** can be well argumented. However, one rule must be chosen (Or, there will be a fight and the sandwich goes to the strongest!). How can the rule be chosen? Some might suggest the democratic way, by voting. The market solution could be the willingness to pay. The person who saw it first might argue that the ownership relation was already established before the others came to the place. The hungriest person may have a point in saying that the increase of her/his energy level might increase most the entire group's efficiency.

Some in the group may also get together and try to solve the conflict by **cooperation**. The cooperation might concern the introduction of a rule where some actors may give up some of the benefit in order to get something.

Rules of solving problems caused by economic interdependence are called **institutions**. Institutional economics analyses those rules, institutions, and tries to modify existing institutions or introduce new ones for better reaching the wanted outcome.

2.2.2. Transactions

2.2.2.1. What is a Transaction

When commodities are physically transferred in an economic system the economists usually talk about **exchange**. The institutional meaning is the legal transfer of ownership, which is called a **transaction**. If I own an apple I can either eat it, save it for the future, sell it, or give it away. By selling or giving it away I give up from the **property right** and transfer it to somebody else, who is then in a position to eat it or, for example to sell it further. The apple may be untouched on the table during the entire process, only property right relations have changed.

Transaction is a central concept in institutional economics.

> "Thus, the ultimate unit of activity, which correlates law, economics, and ethics, must contain in itself the three principles of *conflict*, *dependence* and

> *order*. The unit is a Transaction. A transaction, with its participants, is the smallest unit of institutional economics." (Commons 1990, p.58)

Transactions, changes in property rights take place between individuals or groups of individuals. "A property right is not something a person has independent of the relationship of that person to others" (Schmid 2004, p. 7).

The reason for examining transactions is that transactions, shifts of property rights, occur within the rules set for the transaction. However, by changing rules, the distribution of property rights can be affected. It is a matter of public choice, which one of the transaction modes is chosen as a form of transferring the property rights. Property rights in turn define "who gets what and who pays". Thus, by affecting transactions the performance of the system can also be affected.

2.2.1.2. Types of transactions

Four types of transactions can be identified (Commons 1990, Schmid 2004). Characteristics of these types of transaction are described in table 1.

Table 1: Types of transactions

TYPE	REASON	MEANS	INSTITUTION	STATUS
Bargaining	Scarcity	Price	Market	Equality
Managerial	Efficiency	Command, persuasion	Hierarchy	Authority
Rationing	Agreement	Negotiation	Political	Citizenship
Grant	Habit, altruism	Allowance	Relation, friendship, etc.	Ownership

The most common type of transaction is a **bargaining transaction** in the market. The reason for bargaining is scarcity, the price acting as means. Both parties, the buyer and the seller have, at least in principle, an equal legal status with respect to the transaction.

A **managerial transaction** takes place in a hierarchy, e.g. when a good is moved from one department to another in an organization. Somebody has given an authority to command or persuade such a transaction. The reason for a managerial transaction is not scarsity but efficiency caused by division of labor.

Rationing transactions differ from bargaining and managerial transactions in that they are negotiations of reaching an agreement among several participants who have the authority to apportion benefits and burdens to members of a joint enterprise (Commons 1990, pp.67-68). This is a type of a transaction that is prevailing in political decision-making where citizens and their representatives attempt to reach a political agreement.

A grant or status transaction is a one-sided transaction where the owner of a good gives up the property right without compensation. This kind of a transaction may be based on friendship or status the reason being just a habit or a sign of altruism. Grant or status transactions are common between friends and relatives, for instance between family members. Most transactions in tribal societies base their transactions on status and grants.

2.2.2. Institutions

2.2.2.1. What are Institutions

“Institutions are rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction” (North 1991, p.3).

“…institutions are collective action in control of individual action” (Commons, p. 69).

“Institutions are human relationships that structure opportunities via constraints and enablement. A constraint on one person is opportunity for another. Institutions enable individuals to do what they cannot do alone” (Schmid 2004, p.1.)

Organized societies build formal institutions through legislation and other ways of rule making. However, even in most “organized” societies most rules are informal, based on cultural habits and behavioral norms.

2.2.2.2. Rules of interdependence and the process of rule formation

Institutions are rules. Rules are means of economizing interaction (transactions). Rules help predict others' behavior in different situations. If the set of rules one actor uses is very different from those of another, it may prevent the entire interaction between the two actors from leading to a transaction. "Getting to know" a person means learning something about the rules a person uses in certain situations. This knowledge about expected behavior makes interaction easier. In other words, it lowers uncertainty and thus transaction costs.

Established societies make their own rules based on common law and laws for special purposes, such as laws of contracting. Organizations have their own rules for governing interdependence. Public organizations often have very explicitly defined rules for mutual interaction. Business organizations' rules may be less explicit, such as a common trading culture or active ways of adjusting to their environment such as business marketing. An organization's internal rules may be explicit, such as organizational structure description, or implicit, such as prevailing organizational culture ("our way of doing things"). Individuals form their own rules for interaction as well.

North (1992, p.8) states that "In the Western world, the evolution of courts, legal systems, and a relatively impartial system of juridical enforcement has played a major role in permitting the development of a complex system of contracting that can extend over time and space, an essential requirement for economic specialization." Although a large number of impartial third-party enforcement systems may indicate a system capable of extensive, impersonal trade, it may also indicate that the prevailing exchange culture, based on highly personalized exchange, is underdeveloped (it lacks the mechanisms to resolve disputes absent third-party enforcement). It may also indicate that new trading situations have arisen being inconsistent with the rules of the traditional trading culture.

Rules are the cumulative product from past transactions. They form a hierarchical order, as shown in figure 1 (see also North 1991, p.61). Rules evolve over time; at

the top of the hierarchy (individual behavior), rules evolve more quickly, and at the bottom (culture and custom), more slowly. As discussed below, rules for similar kinds of interdependence may appear in different cultures at various levels of the rule hierarchy.

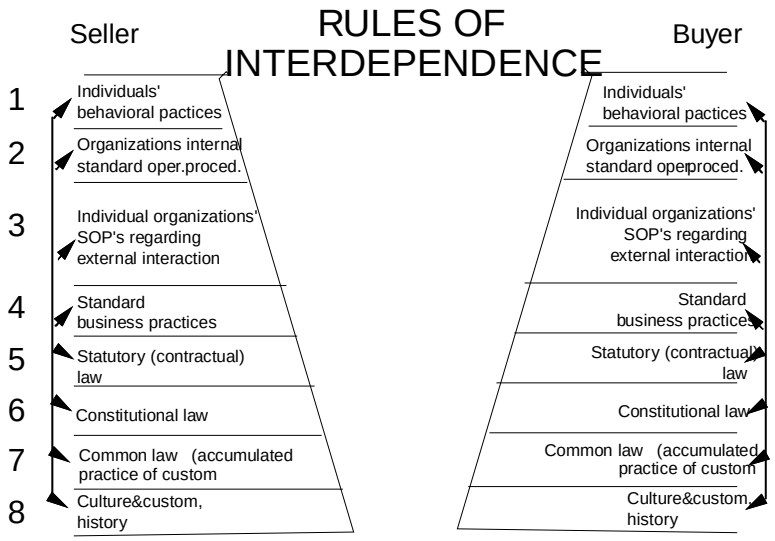

Figure 1: The Hierarchy of Rules of Interdependence

Culture and traditions act as a base for human interaction. During the lifetime of an individual or an organization, the experience from the past is added as cumulative learning, often leading to gradual changes in general traditions. Past transactions have affected the behavioral practices of individuals conducting these transactions, which in turn increase pressure of changing organizations' Standard Operating Procedures (Cyert and March 1963). If the pressure is strong and widespread enough, it often affects legislation, and gradually becomes a part of culture, custom and history. Another way of rule formation is active learning from other cultures. Thus, social-science research and interactions with other cultures may play important roles in the development of ways to reduce a society's transaction costs over time.

If the conditions creating interdependence remained constant, the institutional setting would evolve to become more and more adapted to the existing conditions of interdependence. This evolution would eventually lower transaction costs to a minimum. Transaction costs would reach a minimum in this stagnant situation when all possible behavior would occur according to predefined rules. Planning would be easy, as behavior of individuals and organizations could be perfectly predicted.

However, the conditions of interdependence are constantly changing, making existing rules obsolete (Shaffer 1967). New goods must be transacted in an environment, which is an outcome of past transactions (path dependence, North 1991, induced innovations, Hayami & Ruttan 1988). These new goods (e.g. products from the biotechnology) may require rules, which are not existent in the present structure making the old rules obsolete.

The hierarchy of rules is the outcome of the process of various actors having varying power to influence which rules are implemented. Given a certain distribution of power, the hierarchy of rule formation reflects the process of economizing the transaction costs of general governance. In cases the interdependence has unilateral features the general legislative rules applied to “all” may be sufficient. Transactions

having unique features may need special rules or the rules may have to be defined in court, often after the transaction has occurred and a dispute arisen.

A key question for society is which level of rule making (and enforcement) is least costly for a given type of transaction. This is essentially the question that Williamson poses regarding private governance, but we pose it here at a broader level, examining the whole realm of possible ways of regulating human interdependence, from culture to individual idiosyncratic behavior. For example, the increase of dispute resolution via court cases may be a sign of that a court is a superior way of making rules for certain types of transactions. Increased recourse to the courts may, however, be a sign of poor performance of alternative existing rule-making mechanisms to handle these disputes.

Because of the interdependence of various rules, all of them do not neatly fit exclusively into the categories shown in figure 1. Cultural background may directly affect individual behavior, which in turn may affect formation of laws. Another way of clarifying the hierarchy of rule formation is that starting from the bottom, culture and traditions, the higher levels take care of the residual of rules needed. Organizational rules still provide room for a range of individual behavior.

The notion of hierarchical rule formation supports the central argument made by North (1991), that standard applications of governance structures independent of existing rules produce different kinds of performance in different rule structures. North further argues that this is the reason for very different economic developments in different countries in spite of similar technologies available to them.

The mix of rule formation at various levels provides insights into how to target institutional innovations. If the difference of rule mix at various levels is unnoticed, it may cause mistakes in transfer of successful institutional arrangement from one culture into another.

The examination of the mix of rules may also provide a resource for utilization of existing latent rules for new purposes. For instance, implementation of a new policy may be easier if the expected behavior is based on a previously known rule, instead of introducing a completely new way of expected behavior. Existing rule structure may contain characteristics, e.g. stemming from culture, which may be regarded as resources in dealing with interdependence.

In various cultures, the mix of monetary and non-monetary transactions may occur according to rules created at different levels of the hierarchy of rules or cultural levels. For example, many conflicts in Japan are solved between parties privately based on old customs (levels 8 and 2 in figure 1). In the USA, the same kinds of conflicts are taken into court (level 5). In has been stated that the number of "per capita" court cases is 20 times larger in California than in Japan. In most developed countries the responsibility for an unsatisfactory product or service is shifted to the producer through consumer legislation (level 6). Without this legislation, the responsibility for dealing with the problem falls first to the consumer, and secondly the producer, if private negotiations and enforcement allows.

Understanding the rule structure is important in introducing new exchange arrangements. If the proposed arrangements are too far from the existing ones, the transaction cost of adopting the new rules may be so high that the innovation remains unadopted. Also transferring marketing systems from one culture into another may fail because of different rule structures.

In some developing countries one can observe dual governance structures. Either in the colonial era or thereafter, governance structures based on foreign cultures have been constructed. The original set of rules, based on tradition and history, has prevailed among people, especially in rural areas, and the new governance culture has remained among the new establishment. A similar situation can be observed after the political transition of the former USSR. There is great uncertainty about what level of the hierarchy will regulate the interdependence inherent in various types of transactions. Old explicit or legislative rules are often abandoned without replacing them with new ones, which has led to other, often socially less desirable ways, of governing the transactions (e.g., through the emergence of Mafias).

As discussed above, jurisdictional boundaries define how the units of making rules are formatted. Jurisdictional boundaries may be defined geographically, demographically, racially etc. In many cultures (e.g. in Greece) the mutual control between members of families, relatives or villages is so strong that legislation e.g. against theft is almost unnecessary.

In developing countries lacking consistent law enforcement by the central polity, old village rules and customs have been efficient ways of instituting new activities, such as revolving funds. Also in rural areas in developed countries many transactions, such as mutual aid, occur on a non-monetary basis according to implicit mutual contract involving reciprocity (level 2 in figure 1). In urban areas with a large number of people, such a behavior would increase transaction costs substantially because of free riders in an environment of lower social control. Thus, similar transactions in towns are more often instituted at level of explicit contract (level 3 and 4).

The discussion above is an attempt to describe the dynamics of the process of rule formation creating the institutional environment for each transaction. As each transaction occurs within a certain set of rules, transactions may also shape the rule structure.

2.2.2.3. Property and ownership

Property has been traditionally understood as the relationship between the owner and a good. The property may be tangible (corporeal) or intangible (incorporeal). Tangible property is usually easy to define. Intangible property may be more difficult. Withholding an idea or opportunity from others to use may not be a visible property until implemented.

Dividing property into goods and services brings two kinds of property that have very different characteristics. A good can mostly be inspected before the purchase but the actual contents of a service can be realized only afterwards.

Economists often make the distinction between private and public goods. Public goods are such where the beneficiaries are difficult to separate from non-beneficiaries. That is why such goods than security and national defense are usually taken care by the society[4].

A distinction somewhat similar to private and public goods is the deviation of property into incompatible use and joint impact goods (Schmid 1978). By incom-

[4] There are examples where the society has been too weak in taking care of citizens' security and such services have shifted to mafia-type organizations.

patible goods is meant such property which use excludes others from using it. For example, if I eat an apple, somebody else cannot use it anymore. A joint impact good does not wear out when using it. Nice scenery remains a property independent on the number of viewers. The problem with joint impact goods is how to exclude such users who are not willing to take part to the costs of producing it. In order to avoid the problem of **free riders** extra costs are borne. Such costs are called **exclusion costs**. For example, when purchasing a cable TV we get a "black box" for excluding such viewers who would not be paying.

The owner of a property is able to create costs on others about the use of it. In addition to one person's belief that s/he owns a certain property, others must also accept this. So ownership is a function of social acceptance.

2.2.2.4. Rights and Property Rights

Rights, or property rights, describe the relationship between the owner and others. So rights deal with relations between persons, not relations between a person and property. One person's right is another's cost. Other persons' rights shape one person's rights. This creates economic interdependence causing conditions of conflict and cooperation. Allen (2000, p. 312) defines transaction costs resulting from the transfer of property rights.

Rights determine who has to make a bid to whom (Schmid 1978, p. 8). Think about the factory polluting the nearby neighborhood. Must the factory pay to the nearby inhabitants to be allowed to continue polluting, or should the inhabitants pay to the factory in order to breathe fresh air?

Rights are controlled and maintained by rules having public acceptance. Among such rules are laws, contracts, treaties, social norms and accepted behavioral practices. Thus, rights, rules and institutions are to a great extent the same thing.

The public acceptance is usually not enough for maintaining rights. Rights must be protected by an enforcement system. Lacking enforcement system is the greatest problem for functioning rights especially in many developing countries.

2.2.2.5. The Market as Ethical Institution

Economic literature often talks about "free market". The free market comes from the economic model that excludes all the external rules and regards them as harmful for the performance of the market.

The fact is that there is no market without based on commonly accepted rules of exchange. The difference between a good deal and theft is based on ethical judgment. This ethical judgment may be very different in different cultures. This means that the market is not just an ethical institution but also a function of cultural heritage, as discussed in section 2.2.2.2. Characteristics of markets are further discussed in section 3.4.

2.2.2.6. Institutions in Economic Analysis

Traditional economic analysis in its simplified form may be explained as an analysis about the consequences of a price change on the cost-benefit distribution in the

rest of the economic system. Because the institutional structure is outside the analysis, it remains constant.

Institutional analysis operates in another dimension of economic analysis, as illustrated in figure 2.

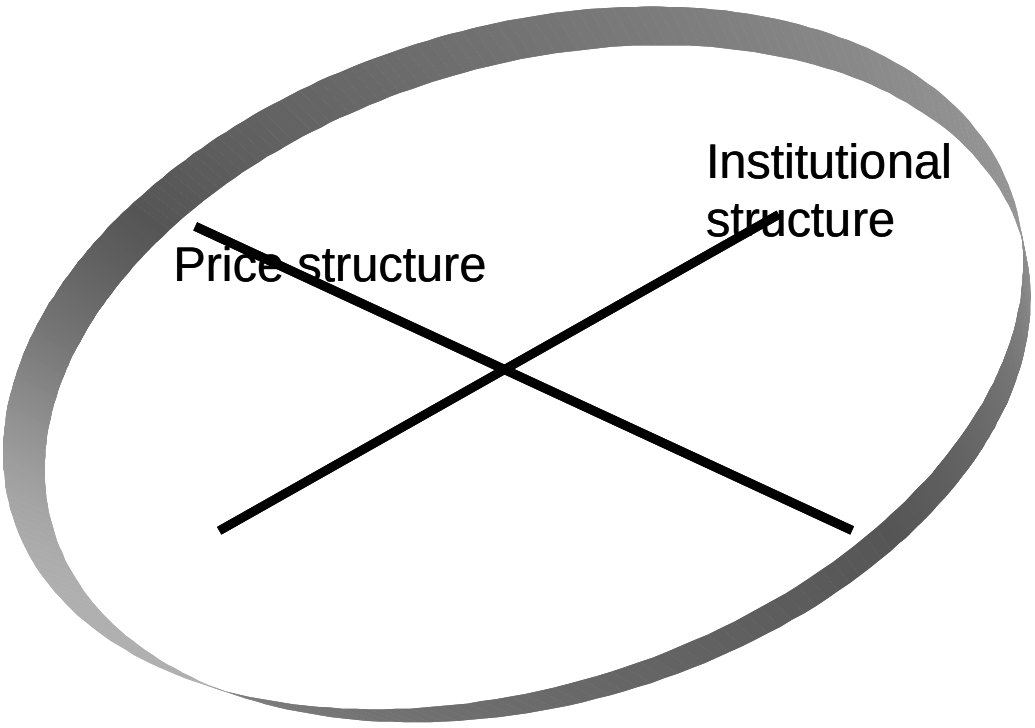

Figure 2: Price and institutional structures in an economic system

Institutional analysis is interested how the changes in institutions, rules affect to the distribution of costs, benefits and risks. For practical reasons the price structure is often kept constant.

2.2.2.7. Institutions and organizations

Institutions and organizations are often used as synonyms in the discussion. In the institutional economic analysis there is, however, a clear distinction between institutions and organizations.

Institutions have already been defined as rules, rules of the game of rights. Exact definition of an organization is much more difficult. Organizations have features such as common goals, borders between members and non-members, perhaps common management and organizational culture. However, there are people who share same goals and culture but they do not form an organization ("Latent groups", Olson 1965).

The difference between institutions and organizations can be illustrated by thinking about a soccer game. The soccer team is an organization. Rules of the soccer game are an institution. The referee acts as the enforcement system. If the institution is altered or changed the game is not soccer anymore. The same happens if the referee is too weak or incapable to protect the team members' rights.

Institutions of one type or another can be traced back to the earliest stages of history, whereas organizations as we know them are relatively recent development (Scott, W. 2001, pp.71-72).

2.2.2.8. Evolution of institutions

As described in section 2.2.2.2., institutions evolve over time. New developments create a need for new institutions. When the microcomputers spread in the 1980's the societies were not prepared into the development. For instance, software publishers' rights were not sufficiently protected. After a couple of years' lag that situation gradually improved. A similar situation concerns GMO food at present.

The appearance of a new institution may first concern informal behavioral practices between parties most affected. In many cases this may be enough. Formal contracts may be the next step. If it is appropriate that the rule must concern a larger number of actors, the society may include it to the legislation. If the institution proves to be continuously useful it becomes a part of the cumulative history and culture.

At the same time when new institutions are created, some institutions become inadequate or obsolete. In countries becoming members of the European Union numerous national institutions become useless, for example national customs legislation. Simultaneously new institutional framework is adopted. This adaptation process may be difficult and it may take a long time.

Institutional structures may differ considerably. If a common set of fundamental changes in institutions is presented in different circumstances that may lead to widely divergent outcomes. This is what North (1991) calls "path dependence". In order to know where to continue, one has to know from where s/he has come.

2.3. Institutional Economics

2.3.1. Foundation of institutional economics

Foundations of institutional economics were laid in the middle of nineteenth century. The so called German Historical School (Commons, Pigou, Veblen, Parson) made observations that were difficult to combine at the same time developing classical economic theory. Among such observations were:

- The concept of "intangible property", the ownership of expected opportunity. The right to fix prices by withholding the property from others they need but not own (Veblen).
- The ownership and materials is not the same thing (Commons, Marx).
- The organization and institutional structure matter (Marx).

2.3.2. "Old" and "New" institutional Economics

From the analysis of wealth, ownership and institutions developed a heterogeious body of analytical approaches later known the school of institutional economics. Among institutional economists "old" and "new" institutional directions may be separated.

Old institutional economics (OIE) goes beyond neoclassical economics in investigating the basic structure of property rights in the society. It analyzes whose costs are taken into account in the economic calculus and what market measures can be considered as efficient outcomes. For example, what is the relation between efficiency and social acceptance? The market may produce multiple "efficient" outcomes and, thus, one must decide what kind of a state of a market is preferable. Property rights (=institutional setting) determine what is counted as efficiency. The role of power is important.

New institutional economics (NIE) has roots in neoclassical economics. NIE has broadened the traditional economic theory by admitting the observation already by Marx that institutions matter. The other difference to neoclassical economics concerns the assumption about human behavior. Most NIE approaches recognize bounded rationality instead of full rationality and opportunism instead of full honesty (see section 3.3.). NIE believes that institutions arise as part of society's effort to use scarce resources efficiently. NIE scholars have been widely recognized during the last half if 20^{th} century. Representatives of NIE have, among others, got four Nobel prices in economics (Buchanan, Simon, Coase, North).

The differences in those schools may be describes as follows. In the traditional neoclassical economic theory the purpose is the cost minimization within a given framework. In the NIE the cost minimization and economic efficiency can be affected by changing institutions. NIE has relatively little emphasis on power determining the performance of property rights determining whose costs are taken into account in the analysis. OIE recognizes the question about whose costs are taken into account in the analysis. OIE also examines efficiency but asks that whose efficiency is attempted to foster and at cost of whom?

So, when NIE examines relations between the master and the subordinate, the OIE may present a question why somebody is the master and the other a subordinate in the first place!

3. Transaction Cost Approach to Analyzing Economic Coordination

3.1. Basic setting

One of the objectives of economics is to coordinate between what is in demand and what can be supplied. Scarce resources prevailing, the demanded goods have to be placed into an order of preference.

Different parties have different demands and wishes from an institution, which will here be called "preferences". The problem of coordination boils down to two important questions: (1) how preferences are articulated to the (marketing) system[5], and (2) how the system is capable of reacting to preferences. Thus, coordination is a way of converting preferences so that they get counted by the system.

First, ways of articulating preferences with regard to their effect on the system will first be examined[6]. The properties of transactions able to react to the preferences will be considered next, using transaction cost economics.

3.2. Modes of preference articulation

When examining the process of recuperation (to be able to better coordinate supply and demand), Hirschman (1970) presents the concept of two alternative ways of articulating preferences: "exit" and "voice". Exit refers to the typical market behavior of a buyer choosing one good but not choosing another. If the buyer chooses a competitor's product, the manufacturer should get information about the relative dissonance[7] between his product and the buyer's preference. This information should, after a certain threshold, facilitate recuperation. Voice refers to behavior in which the buyer (citizen, administrator, etc.) seeks to bring about favorable changes in the goods offered by expressing his/her opinion to the servicing organization. According to Hirschman, voice – although it is usually more costly – provides more comprehensive information about preferences than exit.

Voice and exit affect the recuperation process in a different way. Changes will always be more or less resisted. Hirschman discusses the "management reaction function" as the threshold amount of information and pressure to alert the management of the need for readjustment. Voice may be richer in information but the representativeness of the voiced dissatisfaction cannot be determined and its opportunistic use may always be suspected. Exit provides "exact" information about real behavior but does not tell anything about possible alternative behavior outside the existing opportunity set.

It is not uncommon in the practical business world that parties within a firm have differing opinions, e.g., about the causes of a decline in business. There is

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5 The term "marketing system" is used in this study interchangeably with "exchange system", including also other institutions than just the market.

6 In traditional economic theory, prices and their changes were considered as sufficient means of articulating preferences. Adam Smith's "invisible hand" took care of both preference articulation and economic coordination.

7 Relative dissonance refers to the best available good, not necessarily the best good.

uncertainty about the real and, perhaps, varying reasons for exit, and it is easy to find causes for decline in circumstances outside the firm's own organization[8]. It is not unusual, either, that the management tries to interpret the criticism as the unrepresentative voice of an embittered minority.

Exit requires alternatives to choose from. If alternative product varieties do not exist, voice is the only possible way to influence matters.

Hirschman (1970, p.34) states that "voice is in a much more commanding position in less developed countries where one simply cannot choose between as many commodities, nor between as many varieties of the same good ...". In advanced food systems where alternatives are many and the food items are developed and far processed, the use of the voice option as the only means of influence would not be appropriate because it could hardly be based on sufficient, specialized information.

Contrary to the view of traditional economics, Hirschman does not necessarily consider perfect competition (exit option only possible) as the best or monopoly as the worst market structure in respect of recuperation. The signals of exit in perfect competition may be too weak compared to the management reaction function, and corrective action may start too late and take too long, causing bankruptcy instead of recuperation. It may also happen that no one is able to move away from perfect competition although realizing an alternative and better way to respond to preferences.

The exit option in a monopoly situation may cause the most mobile, unsatisfied customers to exit and so decrease the pressure on the management for recuperation. Hirschman takes an example from the Nigerian railroads where unsatisfied customers, tired of complaining, shifted to the use of trucks, taking the pressure for recuperation off from the railroad management. One of Hirschman's discoveries is that different customers exit when the price increases than when the quality of the services decreases. The problem of monopolies is not a problem of price increase but of inability to keep costs down (see Liebenstein 1979). Thus, a lazy monopolist is not necessarily worried if the most quality-conscious customers exit. In Finland, firms in monopoly-like positions such as the postal service, railroads, many branches of the food system, etc., may not insist on keeping their most quality-conscious customers (demanding fast and reliable postal or railroad service, or luxury foods) by price discrimination and quality services, but rather let them exit. "The best of all monopoly profits is a quiet life." (Hicks cited by Hirschman 1970, p.55)

Exit without voice may be capable of coordinating alternatives in a closed system. But when preferences would best be satisfied by a good outside the available alternatives, some kind of voice is always needed to get these preferences articulated to the system. Voice, in turn, may not be effective if exit cannot be used as a threat to get the desired changes counted. If the threat of exit is not possible, the management may, e.g., choose to deal with angry customers or workers rather than change their own behavior.

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8 In a community development project conducted by the Helsinki Research Institute for Business Economics it was clearly demonstrated in interviews between the entrepreneurs and the author of this study that the entrepreneurs were very eager to find the reason for poor economic performance from outside the firm: bankers unwilling to give out loans, taxation officials, buyers unable to understand their product's superiority, etc.

3.3. Behavioral assumptions in economic coordination

The most simple traditional economic models assume that actors behave rationally, having perfect knowledge and an unlimited capacity to process information, and that they seek self-interest honestly. The basic difference that has led to transaction cost economics is a different kind of conception of human behavior. Williamson (1975) considers two basic differences important: bounded rationality instead of full rationality, and opportunistic behavior instead of full honesty.

Bounded rationality refers to human behavior that is "intendedly rational but only limitedly so" (Simon 1961, p.xxiv). Bounded rationality stems from two sources: neurophysical limits of human beings, and language limits. The former restricts the information processing capacity, which may either be too slow or incapable of processing complex information. Language limits may come from the inability of a human being to articulate his or her experiences or intentions, from the limitations of the language itself or from differing perceptions of the symbols used. Because of language limits the sender may convey a false or incomplete message, which the receiver may understand wrong or inadequately, or fail to understand at all. Personal contacts, demonstrations, etc., are ways of avoiding language limits.

Opportunistic behavior includes strategic action towards seeking of self-interest. Williamson (1975) defines opportunistic behavior as seeking of self-interest with guile. Human beings may provide incomplete, false or misleading information, make self-disbelieved promises for the future, or break earlier promises if new opportunities make it advantageous.

Assumptions regarding bounded rationality and opportunism make analysis much more complex than the alternative of keeping to the traditional assumptions mentioned in the beginning. However, by including bounded rationality and opportunism, the differences of institutions in safeguarding against "real" human behavior come into a new light. One reason for an organization to divide work into small parts is as a safeguard against bounded rationality. Institutions are rules for expected and accepted behavior, which safeguard against opportunism and provide punishment to actors behaving against them.

3.4. Principles of marketing system design

3.4.1. Basic ways of arranging the marketing system

Williamson (1975) states that there are two basic ways of arranging transactions: either trough the market, or through the hierarchy. By market he means the market transaction by which property rights of a good shift from the seller to the buyer. By hierarchy he means the hierarchical structure of a firm.

The coordinating mechanisms of the hierarchy (firm) and the market are different. In the market, the coordinating mechanism is the price. Hierarchy is coordinated by plans, budgets and standard operating procedures.

The question arises: why does a firm do certain tasks itself and buy others? Or, as Coase (1937) already put it: "Why do we have firms?" Why do not all the transactions take place in the market? The question is illustrated in figure 3., where the product, an apple involves the tasks presented by dots. Thus, the dots represent various phases of work (fertilizing, watering, picking, sorting, transportation, storing, etc.)

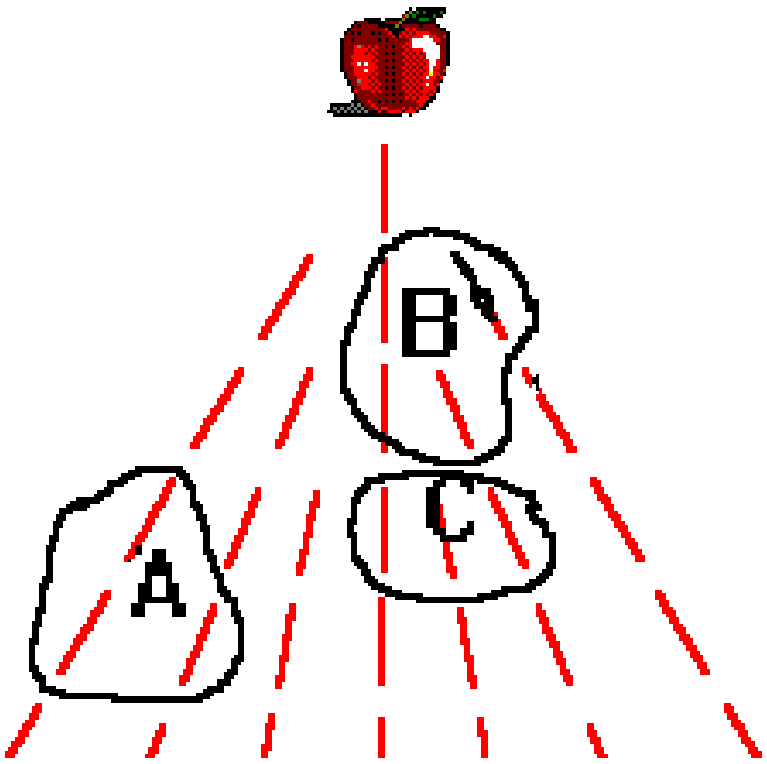

Figure 3: The tasks and organization of product "apple"

In figure 1 the sequential and parallel tasks to be conducted to obtain the product "apple". Circles A, B and C illustrate firms which conduct tasks inside the circle. The questions are: (1) Why is the border (market) B and C exactly where it is? and (2) why does firm A cover only those tasks inside its circle? If C is the apple grower, and B is the apple broker, why does the broker take care of the transportation function, and not the grower? If A is the apple box manufacturer, does this firm

print the boxes by itself, or does it buy this service from another firm? In order to analyze this question, the properties of markets and firms (bureaucracy, hierarchy) will be examined.

3.4.2. The market as a coordination mechanism

The market can be defined as the point where information about willingness to buy and willingness to sell meet. Thus, information is crucial for the market. Another factor is the property right of the good or service to be exchanged. Under prevailing values, nothing can be sold that is not in the seller's control. Even the so-called "free market" is based on current values and cultures and, thus a value free market cannot exist.

The availability to all of information about the supply and demand situation and the freedom for anyone to make a bid, leads to competition, which in turn act as an incentive for efficiency and for willingness to fulfill the buyers' preferences. The incentive structure for individuals to act in the same direction with the entire system allows a decentralization of information, which in turn leads to a situation in which decisions are made in the same environment as the outcomes of the decisions occur.

In the classical economics framework, the problem of coordination of supply and demand should be solved by price fluctuations. Price, which is a unified measure for the different goods and services marketed, should coordinate, not just the behavior of buyer and seller, but also the behavior of derived supply and demand. Price should carry all the information for the "optimal allocation" of resources.

Lipsey (1972) summarizes the reallocation of resources through the market mechanism as follows:

1. A change in consumers' tastes causes a change in purchases, which causes a shortage or a surplus to appear. This in turn causes market prices to rice in the case of a shortage and to fall in the case of a surplus.
2. Variations in market price affect the profitability of producing goods, the profitability varying in direct proportion with price. Producers will shift their production away from less profitable lines and into more profitable ones.
3. The attempt to change the pattern of production will cause variations in the demand for production factors. Factors especially suited for the production of commodities for which demand is increasing, will themselves be heavy in demand, so that their own prices will rise.
4. Thus, a change in consumers' tastes sets off a series of market changes which cause a re-allocation of resources in the required direction and which, in the process, cause changes in the shares of total national income allocated to various production factors.

The above requires, that price be the only motivation for supply and that the benefits of the product and the buyers' happiness can be measured in monetary terms are systematically related to the monetary system.

In the 1930's, some additions were made to the framework of classical economics, e.g. the concept of marginal costs and revenues[9]. The profit-maximizing output for production is, from the point where marginal costs, equal to marginal revenues. The utility maximizing input for a consumer is defined as the point where the utility received with marginal spending is the same regardless of the object of spending. In the case of many buyers and sellers, this would be the point at which supply and demand reach equilibrium.

If the situation changes, e.g., because of a change in consumer preferences, the prices of new, preferred goods would rise, which would initiate an increase in the production of the preferred goods. Competition prevents prices from rising, except temporarily, above the true production costs.

Thus, the market system of a neoclassical economics will coordinate in a self-regulating manner. Almost the only threat to this is when the number of either buyers or sellers decreases to the extent that the intensity of competition declines and one party starts to obtain monopoly profits.

> "A free-market society gives sovereignty to two groups, producers and consumers, and the decisions of both groups affect the allocation of resources." (Lipsey 1972, p.64)

In order to obtain sovereignty, these groups must have the property right to the decisions they make: producers to production capital, and consumers to the goods and services they choose.

Williamson (1985) states that the efficiency of the market as an exchange (transaction) institution comes from its ability to provide "high powered" incentives to coordinate supply and demand. Market incentives are more closely connected to the economic performance of the parties involved than "low powered" incentives.

Market and the state may also be seen as alternative, although inseparable means of articulating preferences.

> "The genius of the market as a social institution is that it provides a mechanism for collecting and summarizing an enormous quantity of idiosyncratic information about the environment and preferences in an easily understood form (prices), which at the same time carries incentives to produce and conserve to the participants of the system." (Shaffer 1980, p.315)

Thus, the monetary system is able to unify otherwise incomparable information about preferences and alternative means to satisfy them, even in the long term.

As mentioned before, the entire question of coordination of supply and demand, and the market's superiority in conducting it is irrelevant in the neoclassical economics framework, because the market itself is assumed to take care of coordination. Under assumptions of the rational profit-maximizing behavior of economic agents, the problem of coordination is reduced to that of resource allocation.

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9 Originally this was, however, presented already in the 1870's by Alfred Marshall.

Neoclassical economic analysis in a competitive market seems to favor markets on every occasion. Mismatch in coordination is explained by the departure from the pure market. Thus, the analysis does not seem to contribute very much if problems in coordination are seen as independent of the rate of competition. The limits of reliance solely in the market coordination are examined in the following.

3.4.3. Reliance solely on markets as a coordination mechanism

Sources of market failures

There is a vast amount of literature about situations in which the market does not perform in a manner it is supposed to. The failures of (neoclassical) markets can be categorized as being caused by: (1) the actor, (2) the information, (3) the good or service to be exchanged, (4) the production of the good, and (5) the market environment.

In the neoclassical market model, as mentioned above, the *actors* are supposed to behave rationally and seek maximal utility honestly. Everybody has power in proportion to her/his purchasing power. Rationality is a proposition of logical behavior, which means behavior according to rules known by the observer. Without this, rational behavior cannot be defined. It is not sensible to judge somebody's behavior as either logical or illogical without being aware of the, what rule an actor is following. Similarly, we cannot say whether a state outside the concept is either large or small. Many scholars share the opinion that it is not realistic for all actors to maximize something all the time. Furthermore we do not even know when something is maximized. In addition, if we allow actors to do mistakes in the traditional market model, the allocation of resources is not "optimal" anymore, but its the outcome of actors' mistakes.

According to the neoclassical market model**,** *information* is obtainable at no cost, understandable to all, and instantly computable. This assumption ignores the limitations and differing capacity of the human brain to compute information, as well as the problem of language. Even a well-functioning market provides information only about the existing environment, not about preferences outside the range of the prevailing supply structure. For example, the market is able to show the demand conditions between three alternative biscuit varieties, but is unable to provide information about whether the fourth, non-existing alternative would be preferred.

Property rights define who is entitled to participate in the bargaining process. If someone does not have money, s/he is often left out to participate. The property rights regarding the information or resources to be exchanged have a direct effect on the representativeness of the preferences and alternatives among which to choose from the market.

Goods may also have properties, which cause market failures. Public and "join impact" goods have high exclusion costs causing market failures in the form of free or unwilling riders. "Free riders" are persons who benefit from others' actions, e.g. from scale economies without the related contribution to achieve the benefit. The problem of unwilling riders is common in making collective rules, since some others in the group may receive costs they are not willing to pay.

The production process may require assets, which cannot be converted at a given time to other kinds of production without costs. The immobility of assets as a function of past decisions causes opportunity costs, which, in turn, may cause a market failure. The market environment may also be uncertain and have externalities causing undesired and unexpected interdependencies.

Organizational Failures' Framework

The schematic figure 4 presents Williamson's organizational failures framework. On the left-hand side are the human factors, and on the right-hand side environmental factors. The interaction of human beings with their environment takes place within a trading atmosphere, which is denoted by the broken line around the human and environmental factors.

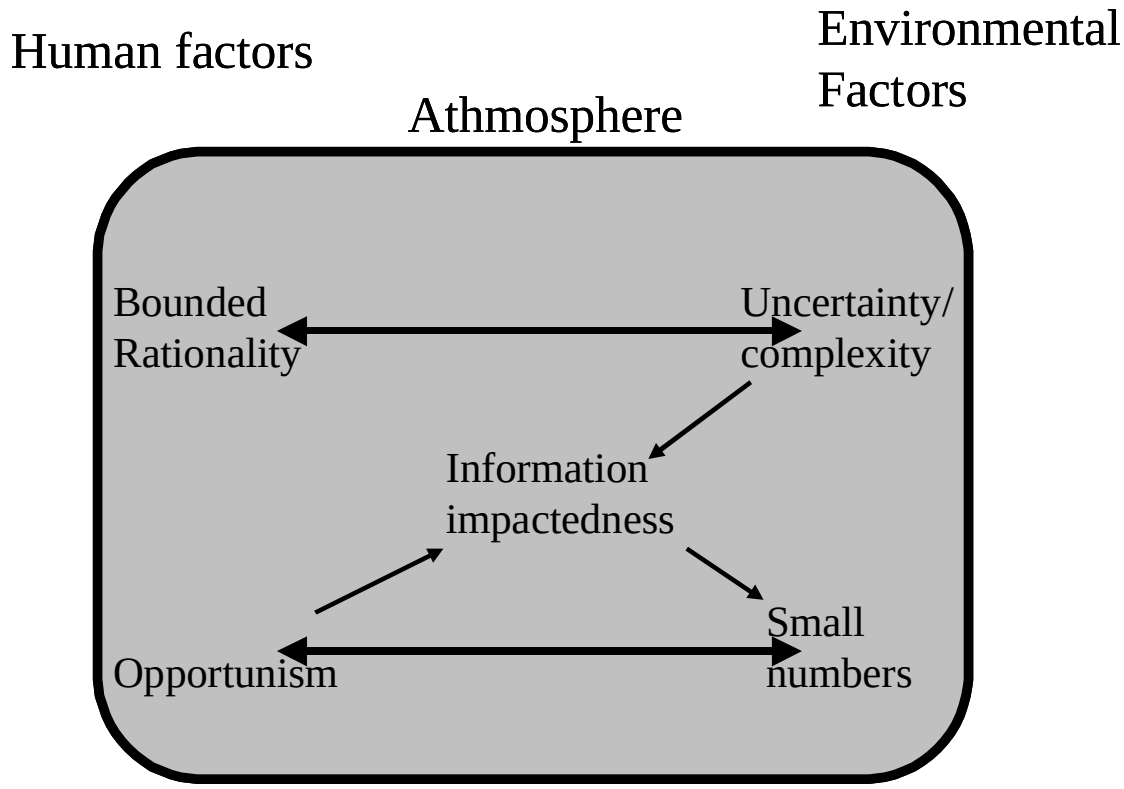

Figure 4: Organizational Failures' Framework
Source: Williamson 1975

The following statements can be drawn from the framework:

(1) If the environment is not uncertain or complex, bounded rationality is not harmful for transactions. The market prevails.

(2) If there are numerous trading actors, there is no possibility for opportunistic behavior. The market prevails.

(3) In a complex, uncertain environment, opportunistic behavior can cause a situation in which the information among the parties involved in a transaction is unevenly distributed, and the bias cannot be corrected without cost. Information impactedness can occur before, during and after the transaction. There is a tendency to depart from the market.

Which one of the two basic ways of coordinating the marketing system is superior to the other, depends on the nature of the transaction. Transaction cost economics, presented in chapter 3.5., examines the nature of transactions in order to appraise the ways of organizing them.

It may be concluded that the market is the most effective way of conducting transactions, if there are no sources of distortion. If distortions exist, moving from the market towards bureaucracies is likely. The advantages of bureaucracies include the following:

(1) When the circumstances of transactions are complex, sequential decision-making and the coordinated use of experts in a bureaucracy may economize bounded rationality significantly.

(2) Tasks guided by planning may reduce uncertainty when an organization is working towards a given goal, even despite temporary changes in the environment.

The two basic modes of transactions and coordinating mechanisms, i.e. markets and hierarchies, were discussed above. The market was considered to have superior coordinating properties in supplying information in a comparable form (prices) and in providing high-powered incentives for the optimal allocation of resources. But all this required well-functioning markets, where opportunism and bounded rationality could not significantly increase transaction costs.

Because of the uncertainty and complexity involved, it is important to coordinate separable tasks through planning. Markets - e.g. spot market prices for already produced goods – provide a poor basis for this; rather, they reflect all the mistakes in planning the production in past periods based on unrealistic expectations (Shaffer and Staatz 1985, p.55).

Hierarchy has properties by which to coordinate activities through internal organization and planning. When tasks can be coordinated through positions of authority, the transaction costs of safeguarding against uncertainty and opportunism can be considerably decreased. Substituting market transactions with internal transactions reduces uncertainty in the coordination of supply and demand. According to Shaffer and Staatz (1985, p.56), vertical integration facilitates the coordination of inputs in the production-distribution sequence. Horizontal integration, which involves market power, facilitates the coordination of supply and demand. Gaining market power is, thus, a means of reducing uncertainty outside an integrated organization.

Integration, in turn, causes problems in providing incentives to prevent dysfunctional pursuits. The cost of the control system, i.e. bureaucracy, is likely to grow faster than the gain from the reduction in uncertainty. A small firm, therefore, cannot do what a big firm can, and a big firm is not necessarily able to do what a small firm can. What is possible and what is not, depends on the circumstances and on the production in question.

The fundamental transformation

All economists acknowledge the influence of a large number of bidders in preventing collusion in bidding. "Small numbers" are a sign of having to watch out for collusion and monopolistic features in the market. According to Williamson (1985, p. 61) "transaction cost economics fully accepts this description of ex ante bidding competition but insists that the study of contracting be extended to include ex post features." (Figure 5)

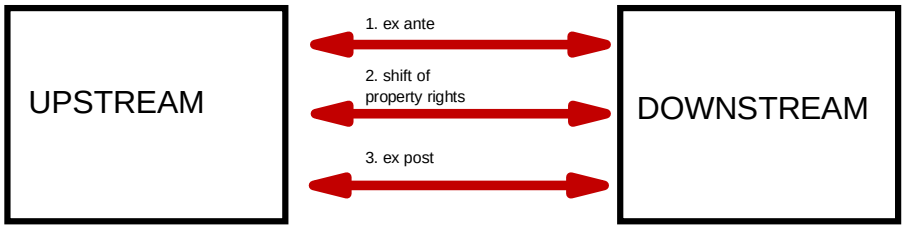

Figure 5: The phases of a transaction

A large number of bidders do not necessarily guarantee that large-number bidding conditions will prevail after the transaction. If asset specific investments are made during the contract execution time, the competitive bidding conditions can be affected. E.g. if a person is appointed to a position for a certain time period, his/her experience gained during this time will provide him/her a competitive advantage in the next competition in a subsequent period. Thus, in the next bidding competition the winner of the former bid enjoys an advantage over the non-winners because of transaction specific investments. This means that there is a tendency for ex ante competitive conditions to develop into a bilateral monopoly. Williamson calls this "the fundamental transformation.

There are other features supporting this kind of development. The development of standard operating procedures (SOP's) and transaction specific terminology strengthened by the personal knowledge of the parties in transacting organizations probably supports development into idiosyncratic exchange conditions. Same persons trading a good on a day-today-basis for a long time may develop a special language and personal partnership which prevents them from changing trading partners even if better alternatives may appear. In standard transaction of recurrent kind, where large number of bidders keeps the market self-controlling, the development of idiosyncrasy can be serious for the market performance.

3.4.4. Bureaucracies (hierarchies) as coordination mechanisms

Properties of bureaucracies as coordination institutions

A bureaucracy is an institution in which tasks are divided and allocated to several individuals in an organized manner. A bureaucracy allows specialization coordinated by planning, which in turn decreases uncertainty of its functioning.

Bureaucracies can be found both in private and in publicly owned organizations. Along with the increase of complexity of long-term tasks, the need for operations requiring the coordinated effort of several specialists is growing.

The tools of governmental coordination are preference articulation through political processes and their implementation through central planning according to the prefe-

rence order collectively agreed upon. This kind of coordination requires delegated authority. Thus, someone has to know, to a certain extent, what is the "right" order of preferences at the given time. If the variation of preferences is high and change rapid, knowledge about the preferences can be very limited. In addition, the value of a good is often different to different individuals.

There is reason to argue that "the market is a marvel", as some have expressed their fascination. However has often become necessary to "correct" the functioning of the market by supplementing institutions such as governmental regulations, long-term contracts, parastatals, labor and consumer organizations, etc.

In the mixed coordination system involving both market and governmental planning, the supporters of the market claim that the reason for inadequate performance is the lack of freedom of the market to work, while the supporters of central planning blame the lack of central discipline in implementing the plans.

Limits of bureaucracies

Most of the features presented above support integration of transactions. It was found that by shifting the transactions from the market into the hierarchy, the effects of both bounded rationality and opportunism could be reduced in transactions involving transaction specific investments. Why is it that two firms, which merge and are thus able to more fully exploit the economies of scale without increasing uncertainty – rather on the contrary - and place decisions effectively on the most appropriate decision making level, do not grow forever? Why can't a large firm do everything that a collection of small firms can do and more? Why don't we have just one firm doing everything?

It was mentioned above that in standard transactions the cost of safeguarding against the possible hazards of market transactions is lower than the cost of internal transactions. Why is this so?

Because of bounded rationality and opportunism, loss of control may occur. The effect of bounded rationality in transmitting messages and images in hierarchical organizations is demonstrated by an old experiment by Bartlett (1932). He draws a figure describing an owl on the paper. He asks eighteen people to redraw it one after another from the figure drawn by his/her immediate predecessor. Bartlett reports that the resulting image resembled the original less each time it is redrawn. After 18 redrawings it ended up as a cat!

Each individual in an organization considers his own opportunity set as a framework into which he associates the incentives for behavior provided by the organization where he works. It can be imagined that a certain competition of interests for behavior takes place between different behavioral incentives from the organization and its other members, and the personal incentives originating from one's home, various reference groups and personal needs. If the incentives to behave according to the organizational needs become weaker than other incentives perhaps reinforcing conflicting individual conduct, opportunistic behavior can weaken the performance of the entire organization. Therefore, if personal and organizational interests conflict, the incentive for individuals to behave according to organizational goals has to be stronger than the incentives to reach for individual goals.

Williamson explains the situation by dividing incentives into two categories: high-powered (market-like) and low-powered (firm-like) incentives. Market-like incentives usually provide stronger motivation to safeguard against opportunism inside the organization than do firm-like incentives. Thus, if transactions between organizations are to be safeguarded against bounded rationality and opportunism by intervention, there is a danger that the hazards shift inside the organization.

Williamson (1985) provides several illustrations in examining the possibilities to maintain market-like incentives after merging two organizations. His conclusion is that "selective intervention, whereby integration realizes adaptive gains but experiences no losses, is not possible". Therefore, the usual message after a merger, stating that firms will continue business without other changes than that the owner is different, turns out to be impossible to fulfill in practice.

Some selected tasks to demonstrate the argument may be presented. *Asset utilization losses* occur when a former owner-manager becomes, after the merger, a manager of a formed division in the new firm. If he no longer has to bear the cost of assets, neither will he have an incentive to utilize the equipment with equivalent care or to arrange preventive maintenance. If incentives to increase the net income of the division are included in his salary, this may provide a motive to act myopically to increase short-term income at the cost of long-term performance.

Accounting contrivances are a very difficult problem in preventing market-like incentives after a merger. Cost determination according to pre-merger regime accounting practices is difficult to maintain. The new owner, now having the responsibility for accounting procedures, may even act opportunistically and keep two books to present differing results to different divisions of the firm. Market-like incentives are very difficult to maintain after a merger.

Incentives for innovations and developing the organization when bilateral trading relationship is formed are distorted as well. Although modern innovations usually require organized technical expertise, innovations are produced more effectively through market-like incentives. Administrative boundaries are much easier to breach than are the market boundaries when demands for reason are expressed. If innovations, however, are born and implemented in a hierarchy, the new division in the organization founded as a result of the merger is apt to demand its "fair share" of the success.

The examples presented above do not just apply in cases of mergers, but also existing hierarchical organizations. In order to prevent such problems, divisions and profit centers are formed, as well as perhaps increasing the decision freedom at lower levels in the hierarchy.

3.4.5. Conclusions regarding the basic coordination mechanisms

The two basic modes of transactions and coordinating mechanisms, i.e. markets and hierarchies, were discussed above. The market was considered to have superior coordinating properties in supplying information in a comparable form (prices) and in providing high-powered incentives for the optimal allocation of resources. But all this requires well functioning markets, where opportunism and bounded rationality cannot significantly increase the cost of transacting.

Because of uncertainty and complexity involved, it is important to coordinate separable tasks through planning. Market – e.g. spot market prices for already produced goods – may provide a poor basis for this; they also reflect all the mistakes in planning the production in past periods based on unrealistic expectations.

Hierarchy has properties by which to coordinate activities through internal organization and planning. When tasks can be coordinated through positions of authority, the transaction cost of safeguarding against uncertainty and opportunism can be considerably decreased. Substituting market transactions with internal transactions reduces uncertainty in the coordination of supply and demand. Vertical integration facilitates the coordination of inputs in the production-distribution sequence. Horizontal integration, which involves market power, facilitates the coordination of supply and demand. Gaining market power is, thus, a means of reducing uncertainty outside an integrated organization.

Integration, in turn, causes problems in providing weak incentives to prevent dysfunctional pursuits. The cost of the control system, i.e. bureaucracy, is likely to grow faster than the gain from the reduction of uncertainty. A small firm, therefore, cannot do what a big firm can, and a big firm is not necessarily able to do what a small firm can. What is possible and what is not depends on the circumstances and the production in question.

3.5. Transaction cost approach

3.5.1. The concept of transaction cost approach

The evaluation of modern economic organizations is much more difficult than it previously was. Williamson (1981) states that the attempts to evaluate a "bewildering variety of market, hierarchy and market modes", conducted by economists, organization theorists, public policy specialists and historians, lack coherent and merged view. This has lead to the following conceptual barriers for understanding today's economic organizations:

1. The neoclassical theory of the firm is the main referent to which economists appeal, is devoid of interesting hierarchical features.
2. Organization theorists, who are specialists in the study of internal organization and unencumbered by an intellectual commitment to neoclassical economic models, have been preoccupied with hierarchy to the neglect of market modes of organization and the healthy tension that is between markets and hierarchies.
3. Public policy analysts have maintained a deeply suspicious attitude toward non standard or unfamiliar forms of economic organization.
4. Organizational innovation has been relatively neglected by business and economic historians.

Transaction Cost Economics (TRC) is to be seen as an attempt to analyze an economic system, acknowledging the limits mentioned above. Markets and hierarchies can be understood in TRC as far ends of the continuum from the pure markets to various contracting forms, partnerships, joint ventures, cooperatives, etc., to pure hierarchy. Figure 6 describes the idea of TRC.

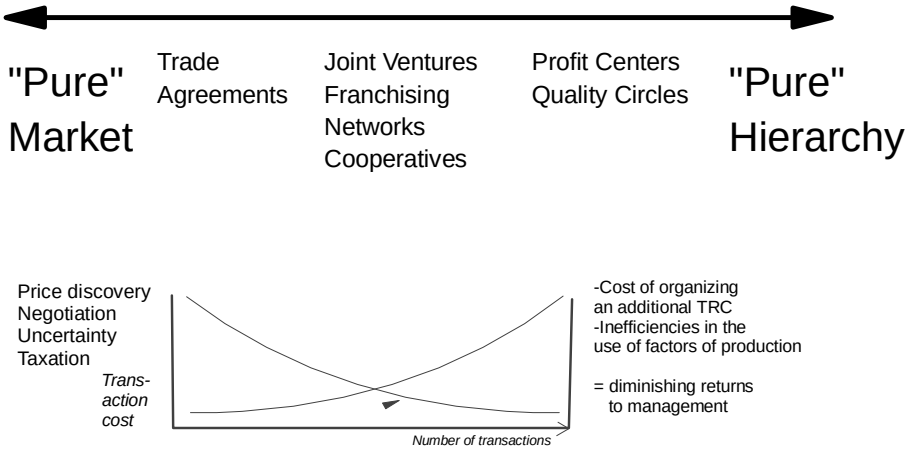

Figure 6: The idea of Transaction Cost Approach

As shown in figure 6, in conditions close to the "pure market", transaction costs consist of costs of price discovery, business negotiations, cost of preparation and mistakes because of uncertainty. These costs can be decreased by arrangements departing from pure market exchange, and leaning first towards contractual arrangements, and finally towards hierarchical structures. But at the same time as the transaction costs of market transactions decrease, other kinds of transaction costs arise. Along the increase of the hierarchical organization the cost of bureaucracy increases as well. Thus, the increase of an organization usually tends to show diminishing returns to management.

According to the idea of TRC the total cost of production consists of, in addition to production costs as traditionally assumed by economists, transaction costs, those being costs of planning, adapting and monitoring the tasks under consideration. And as demonstrated in figure 6, transaction costs vary in different organizational arrangements. Assuming that transaction costs are relevant, the total production costs may be affected through the governance of transactions.

Organizations are structured to minimize (economize) production and transaction costs. The organizational setting, which is most successful in this sense, prevails over other organizational arrangements. It can be assumed that different governance modes have evolved in order to minimize transaction costs. If the circumstances of transactions change, an adjustment of the transactions is required.

The importance and complexity of studying governance structures relates to the complexity of human nature as we know it. The assumptions of human behavior, bounded rationality and opportunism have already been discussed in earlier sections. The idea of TRC may also be interpreted as assessing alternative governance structures in terms of their capacities to economize bounded rationality while simultaneously safeguarding against opportunism.

The two basic alternative governance modes are to make it yourself or to buy it from the market. The former can be called internal (hierarchical) governance, and the latter market governance. As demonstrated in figure 6, in a simplified manner, if internal governance is emphasized, uncertainty is reduced but the governance cost increases. If the market governance is emphasized, uncertainty increases but the governance cost increases.

An application of TRC can be used for two somewhat different purposes, i.e. to explain the current structure and to make predictions about an appropriate marketing system. In the former, the dimensions of transactions in describing the nature of transaction are important. In the latter, principles of organizational design plays a key role.

3.5.2. Dimensions of transactions

The problem of finding meaningful and comparable attributes for transactions can be considered one of the key questions in the examination of transactions in order to explain economic organizations. According to Williamson, three attributes are of special interest in a transaction: (1) the frequency with which transactions occur, (2) the uncertainty to which transactions are subject to, and (3) the degree which transactions are supported by durable, transaction specific investments.

Asset-specificity

While examining reasons for vertical integration, "lock-in" effects can be found. Asset-specificity refers to an investment whose value for alternative uses is significantly lower than its intended use. Investment into transaction specific assets is risky in a situation where the circumstances change during the duration of the investment. Thus, the investor has to evaluate whether the prospective savings in costs afforded by the special-purpose technology justify the strategic hazards that arise as a consequence of their non-salvage character. The problem of transaction specific assets applies especially in bilateral trading conditions.

Williamson distinguishes four different kinds of asset-specificity: site-specificity, physical asset-specificity, human asset-specificity and dedicated assets. As an example of site-specific assets can is a gas station whose resale value after the construction a new main road far away from the site of the present station, is close to nothing.

Physical asset specificity can be described by the following example. Let us assume that a farmer has one hectare of land. The only apple buyer in the area has promised to buy the apples as soon as the farmer is able to produce them, for 1 €/kilo. The farmer plants 350 apple trees having the yearly fixed cost of 7 000 € starting in fourth year after the planting. The variable costs can be estimated as 3 000 € per year. After four years the total yield is 14 000 kg/ year. The promised 1€/kilo would give 14 000€ and, thus the tree planting would be regarded as profitable. But what if the buyer comes back in three years and says that he has made a mistake, and can only pay half of what he had promised. Because there is only one buyer and the alternative value of the apple trees is just that of lousy firewood, the farmer is in a position to accept even that price. The buyer, knowing the situation, may press the price close to variable costs, and even then the seller has to accept the price. Thus, the existence of transaction specific physical assets makes the investor open for opportunistic behavior against which one should have a safeguard, e.g. a contract covering the entire period of that investment.

Human asset specificity becomes more important as production becomes more complicated. Specific human assets, either special education or special knowledge through experience, are often transaction specific. Think about the special skills of manual accounting. After the introduction of modern easy to use computer account-

ing software the technical, manual bookkeeping skills have become obsolete, no matter how good these skills are. The question of human asset specificity is at the core of academic education. Factual skills are often "transaction specific", having little value in changed circumstances. The individual problem solving skills are more "all purpose" in nature, and can be used to solve problems not yet even known.

The feature of dedicated assets occurs when an investment does not lead to the expected income. This may happen in a situation when long and demanding business negotiations do not lead into exchange. The buyer, aware of this situation, may be in a position to press the price down. Or, someone may enjoy the hospitality of a seller having no intention to buy anything!

For accounting purposes, costs have traditionally been divided into fixed and variable costs. For purposes of transaction cost economics, it is much more relevant to distinguish which assets are redeployable and which are not.

Purpose specific assets are necessary on most cases of production. They can decrease certain production costs, but simultaneously increase the transaction costs. Since the initial purpose of transaction cost economics is to examine the sum of production and transaction costs, both have to be included in the examination. Williamson observes the situation as shown in figure 7.

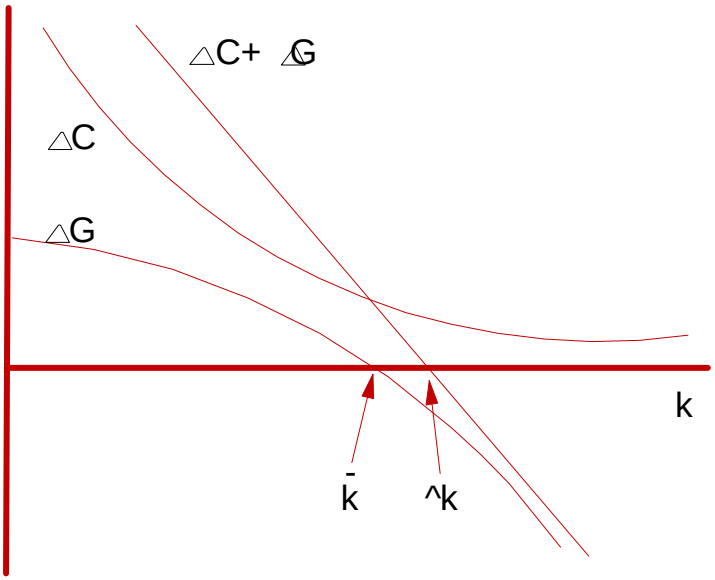

Figure 7: Comparative production and governance costs

ΔG is the difference between the cost of internal governance (bureaucracy) and that of market governance (reduction of the effects of uncertainty, etc.). When asset specificity (k) is low, the cost of internal governance is higher than the cost of market governance (up to point $\bar{k}$). When asset specificity increases, internal governance cost becomes relatively lower compared to those of market governance.

ΔC is the steady-state production cost difference between producing an item that is needed by oneself and buying the same item from the market.

The penalty of using internal organization in standardized, low asset-specific, transaction is considerable. The cost disadvantage decreases when asset-specificity

increases. As k grows the services become highly unique, the realization of aggregation economies becomes very costly. The optimal level of asset-specificity is the minimum difference between the governance and production cost. In figure 7. this vertical sum, $\Delta G+\Delta C$, is presented as well.

The grossover value of the sum $\Delta G+\Delta C$ becomes negative at point ^k, when it exceeds $\bar{k}$. It may be concluded from this that the economies of scale and scope favor market organization over a wider range of asset-specificity values than would be the case if steady-state production cost economies were absent.

The concept of asset-specificity is central to TRC. Asset specificity is relevant to all basic assumptions, bounded rationality, opportunism, and the presence of uncertainty. If absent, these conditions the world of contracts is vastly simplified. In the presence of asset-specificity, non-standard contracting practices quickly appear.

Uncertainty

Uncertainty is related to bounded rationality and opportunism as well. Bounded rationality makes it difficult to prepare for all the possible alternatives in the decision making process in advance. Instead of exact knowledge, approximations have to be made. Both limited human "computing" capacity and language problems prevail. Opportunistic behavior can bring incomplete, distorted or intendedly wrong information to the decision making process ("information impactedness").

Usually it is not possible to see all the actors' plans that affect the decision making environment. Even if they are known, the lag between the action and its possible effect could mislead from seeing the true consequences.

Transaction cost economics states that governance structures differ in their capacities to respond effectively to disturbances. When asset specificity is absent, market governance has the advantageous properties of being able to quickly adapting to uncertainty. If the rate of asset specificity increases, firms reduce the uncertainty about opportunism by integrating new parts of production into the organization. Dividing complex tasks into small portions conducted by experts decreases the effect of bounded rationality on uncertainty.

Uncertainty causes serious problems for neoclassical resource allocation. Although equating marginal cost with marginal revenue maximizes profit, equating expected marginal cost with expected marginal revenue, when expectations are as uncertain as a random number table, will produce a random number distribution of profits and random allocation of resources. However, expectations regarding the economy are clearly not as uncertain as a random number table, although they are far from certain.

The more effectively the harmful effects of uncertainty are reduced, the better the governance structure is able to control the decision-making environment. Thus, governmental and private organizations have an inbuilt desire to control, as much as possible, their environment. Thus, even advertising may be regarded as a way of decreasing uncertainty in sales. Advertising is also a means of reducing the buyers' uncertainty after a transaction. Quite often advertisements function to reinforce already made transactions.

Frequency

Adam Smiths famous theorem starting that "the division of labor is limited by the extent of the market" can also be understood from the point of view of transaction cost economics. It can be said that specialized governance structures are more sensitively attuned to the governance needs of non-standard transactions than are unspecialized structures, ceteris paribus. Thus, specialized structures are more beneficial in transactions supported by considerable transaction-specific assets. Think about a dairy farmer devoting himself to the dairy business for at least 15 years by building a cowshed (which is a very transaction specific investment). There is no way he can make a production contract for 15 years. The difference of the production periods and the contract period has made special arrangements such as cooperatives likely to appear. Similarly, a milk producer is not apt to make a telephone round every morning to find the highest bid for his milk on that particular morning. Besides having to pay a high transaction cost, the producer is vulnerable to opportunism because the product may be no more value in the following day or even in that evening because it is spoilt.

The remaining issue is whether the volume of the larger market is large enough to utilize the specialized governance structure. Utilization is easier if the transactions are of a recurring kind. Hence, frequency is a relevant dimension of a transaction. Even in complex governance structures, standard operating procedures (Cyert & March) can be constructed to decrease transaction costs. The learning process may produce new ways of doing things.

Summary

Institutions economizing transaction costs have to safeguard the needed transaction specific assets against opportunism and uncertainty. The frequency of transactions is important in that it reduces the transaction costs by developing special institutions for recurrent kinds of transactions. The institutional structure of transacting organizations, their incentive system and beliefs and values of personnel are the outcome of past events in the sense of transaction cost economizing.

In figure 8 the decision environment at time point T is restricted by the decisions for the future made by oneself as well as by others. The further we look into the future (time T+1), the less restricting decisions prevail. Thus, the scope of decision freedom is the smallest at the time point T. Uncertainty is also smallest at the time point T, but it lags in obtaining and processing information about the current situation (information impactedness, bounded rationality) and may make it difficult to reach decisions based on real facts. At the time T+1, the scope of decision freedom, as well as the knowledge of the factors at the present time is larger. These factors may be taken into account in the future decisions. Possible changes in the environment increase the uncertainty.

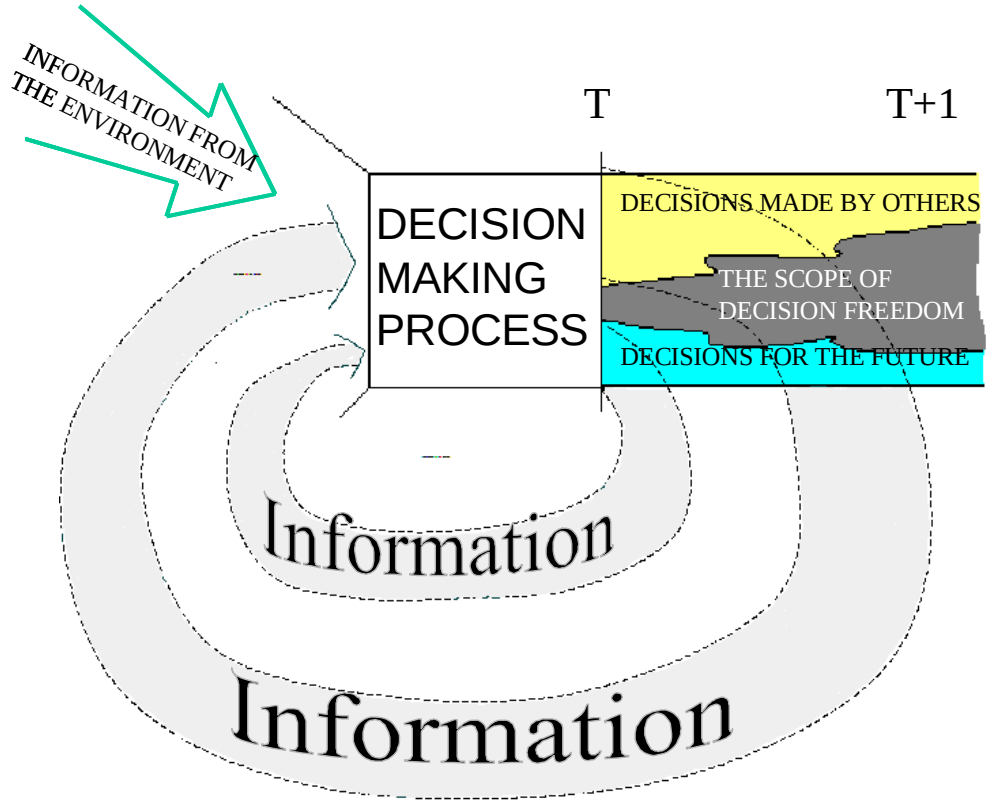

Figure 8: The time dimension in the decision making process

Uncertainty about the future brings both risks and opportunities. Transaction specific assets may cause costs concerning both: costs of preventing the impact of threats (opportunity cost) and costs of missed opportunities. In spite of this, the transaction specific assets necessary for specializes production and the opportunity costs have to be paid because of time lags between a decision and its execution. The scope of decision freedom is a compromise between the market and hierarchy.

3.5.3. Principles of organizational design

Transaction cost economics aims at economizing the total cost of production, which is assumed to be the sum of production and transaction costs. The governance structure is assumed to affect both. The principles of organizational design are many-sided and complex. Williamson states that (1) the asset specificity principle, (2) the externality principle and (3) the hierarchical decomposition principle offer considerable explanatory power in designing new organizations. Of these principles, only the asset specificity principle is linked to transaction cost dimensionalizing. The first two principles are relevant in deciding whether a transaction will be made in the market or in the hierarchy. The third one is important in examining the organization within which the transaction is possibly transferred, thus recognizing that the organizational form is meaningful from the point of view of transaction cost economics.

It is assumed that transactions are arranged through markets unless serious transaction cost problems occur. The market is superior in preventing bureaucratic distortions, and has advantages related to production costs as well. The production cost advantages of market procurement are three: static scale economies can be more fully exhausted by buying rather than making a product if the firm's needs are small in relation to the market. Markets can aggregate uncorrected demands, to realize risk of pooling benefits; and markets may enjoy economies of scope in supplying a related set of activities, of which the firm's requirements are only one. Thus, transaction cost economics assumes that transactions will be organized in markets unless transaction cost disabilities appears.

Asset-specificity principle

It is commonly presumed that recurring transactions of technologically separable goods and services should be arranged through autonomous markets. However, this presumption is progressively weakened, if asset specificity increases.

As demonstrated in figure 6 the relative advantage of markets decreases if assets become more transaction-specific. Investments, which do not have considerable value for purposes other than that intended, can be more fully utilized if the initial user of the services commands them and, thus, safeguarded against bounded rationality and opportunism.

The process of fundamental transformation discussed earlier in this section in ex post competition will also support bilateral trading conditions developing into an internal transaction. The incentives for shifting a bilateral trading relation from markets into hierarchy increase as uncertainty increases, since the costs of harmonizing a relation among parties vary directly with the need to adjust to changing circumstances.

In special transactions without developed standard operating procedures and trading practices, and without negotiating a good contract covering all the necessary features (complexity, bounded rationality) and safeguards against all kinds of hazards (opportunism), may involve such high costs that it would be cheaper to make the good oneself anyway. Williamson mentions the following advantages in utilizing an internal organization:

- Common ownership reduces the incentives of the trading units to pursue local goals.
- Internal organization is able to invoke fiat to resolve differences, whereas costly adjunction is needed when an impasse develops between autonomous traders.
- Internal organization has easier and more complete access to relevant information when disputes must be settled.

Externality principle

The increase of demand externalities weakens progressively the advantages of arranging the exchange between producers of differentiated goods and distribution stages through markets.

For example, when a vegetable broker handles the produce carelessly in order to operate more quickly, unintended deterioration in quality of the produce may result, which is not observed until the goods reach the distributor. It is too costly to meter this kind of deterioration at the proper stage.

Narrowly understood, externalities are technical failures of the market. It is technically difficult and/or costly to isolate the costs and benefits to only those parties involved in a transaction. E.g. if a dairy producer allows his spoiled milk to go into the collection container, the spoilage of the entire tank full of milk will cause expenses also to the other producers. Inspection of every batch can, therefore, be considered as exclusion cost in that particular transaction.

Environmental problems such as smoke, noise, pollution, etc., are typical situations where externalities prevail. The rules made by the community define who bears the cost of such problems. In some cases even global rules are needed. The decrease of Amazon rain forest may benefit those who cut or burn the trees, but the cost is borne by the entire world in a form of harmful affects to the atmosphere. Thus, to prevent this from happening, a global institution to pay for trees not being cut may be needed.

The institutional design of a transaction determines which costs are internalized and which remain externalities. Thus, externalities are relevant factors in institutional design. This includes the problem of free riders and unwilling riders, both of which are common problems in transactions made through public organizations or e.g. cooperatives. Public services may be recklessly used because the cost is covered by anonymous society (free riders). 49 per cent of the society or membership may not be willing to pay for a service needed by 51 per cent and decided upon by majority rule (unwilling riders). A reverse political externality occurs when an individual is in serious need of a service but cannot bring about a large enough collective action to accomplish a favorable decision about procuring this service collectively.

Hierarchical decomposition principle

By hierarchical decomposition principle is meant that internal organization should be designed in such a way as to effect quasi-interdependence between the parts, the high frequency dynamics (operating activities) and low frequency dynamics (strategic planning) should be clearly distinguished, and incentives would be aligned within and between components so as to promote both local and global effectiveness. In other words, decisions should be made at a level best corresponding to the activities performed.

The two principles mentioned earlier are mainly concerned with the choice between the market and the hierarchy, or some intermediate institutional arrangement. The hierarchical decomposition principle concerns the effective organizing of tasks inside an organization where opportunism and bounded rationality also prevail.

The organizational division of decision-making labor can be considered as important as the neoclassical division of production labor. This is important from the information processing point of view. Factoring the total system of decisions to cope with the organization is easier if relatively independent subsystems and each of them can be designed with only minimal concern of its interaction with others. Thus, the hierarchical decomposition principle aims as alleviating the problem of an increase in bureaucracy costs along with organizational growth by arranging the hierarchy into "entrepreneurial firm-like" units. Break up the organization both horizontally and vertically into relatively independently working sub-units has proven to have advantages. Horizontal boundaries can be drawn between individuals and tasks having only a little interaction with each other. According to this principle, high-frequency (or short-run) operations should be separated from lower-frequency, strategic (long-run) operations. Decomposition has to occur in a way such that both low- and high-frequency incentives and information flows are aligned to promote the same direction of action.

Summary

The objective of each of the principles of organizational design is to cope with bounded rationality and opportunism. Asset-specificity would not be a problem if comprehensive contracting were possible. Because of bounded rationality, this is not the case. Comprehensive contracting would not matter if the winning bidder could be trusted to behave in a reliable and trustworthy fashion.

The externality principle is mainly a reflection of opportunism but can also be caused by bounded rationality. Technical externalities can sometimes be corrected with exclusion costs. Externalities could be decreased if information were free and all possible outcomes could be internalized into the transaction.

Hierarchical decomposition attempts to cope with bounded rationality by arranging the complex operations into manageable units, simultaneously safeguarding itself against opportunism (local and individual dysfunctional pursuits) through manageable control and incentive units as well.

The asset-specificity and externality principles are relevant when deciding whether to buy or to make a good. The presence of either of these favors the decision to make, which in turn has to be considered against the limits of firms and hierarchies, discussed in the section 3.4. The hierarchical decomposition principle is relevant after the decision to make has been reached.

3.5.4. Summary concerning the intellectual tools for food marketing system design

The analysis of the properties of the entire marketing system is a crucial base for analyzing individual firms in the system. The statement omits the traditional view that a well functioning marketing system develops by itself if all the regulative hindrances are eliminated.

In the last three sections one set of concepts, Transaction Cost Approach, was been presented. Somewhat different theoretical points of view are Industrial Organization Approach and The Agency Theory. Neither one is able to give a complete answer to the complex problem of marketing system performance and design, but add different, supplementing light to the analyses.

4. Cooperatives and the Transaction Cost Approach

4.1. Cooperatives with respect to preference articulation

Hirschman (1970) considers the combination of voice and exit as the best situation in respect of recuperation. Almost all organizations have these two options available in principle, though not necessarily at equal transaction costs. It is possible to exit from a society either by moving into another country or by becoming alienated from existing society. It is also possible to use voice in a well-functioning market, but usually the incentive to influence it – once the transaction has occurred – is weak. There is a possibility for social traps (Platt 1973) if the actor considers it too costly for him to use voice if others are not using it, or considers it not worthwhile after the transaction has been made.

There are many mechanisms combining voice and exit. Several business firms use customer committees to improve the voice option. Bureaucracies are shortening re-election periods to induce exit. Although there are many kinds of contracting forms combining voice and exit, the cooperative is the only organizational form where both options are organized into the same institution and have an equal status in principle. In a cooperative it should be possible to use either voice (political option) or exit (market option) to affect the recuperation (readjustment) of the institution.

Schmid(1978) defines voice as a means of persuasion without the property rights to do so. Asking for charity or for the supporting opinions of people with prestige when not able to use voice oneself are examples of this. If voice is understood as a way of influencing without property rights, it is not effective without the threat of exit or without the existence of sympathy. Presumably Hirschman's firm has no conflicts of interests.

Schmid writes: "It is sometimes said that a co-op member is more likely to use voice in telling the co-op manager what is wrong rather than simply exiting. But, if it were only voice, the member could bring no cost to bear on the manager except scorn. ... Where the owner of the opportunity has objectives conflicting with the voiced request, the voice is likely to be rejected." (Schmid 1988)

Cooperative members have the property right to use voice. Skår (1981, pp.74-75) states that, in principle, an individual has only three ways to influence decisions. They are political, professional and cooperative alternatives. Despite the observation that the cooperative alternative is the shortest and the political the longest way of influence, he shows that the cooperative is the single institution in which an individual (member) has both influence and contract (voice and exit) built into the system.

Hirschman (1970, p.54) states that the recuperation mechanism may rely too much on exit at the lower end of the quality scale, but suffer from a deficiency of exit at the upper end. This may appear contrary to Olson's (1965) view that numerous "small" members in a group may utilize a few "large" members. Also Kuhn (1972) states that large "quality-conscious" members of a cooperative have a much more powerful possibility to threaten with exit than small members who do not have as many alternatives for exit than large ones. This suggests that the commodity of a

cooperative which members respond to is the possibility to get the advantages of large members even though the member is small.

In conclusion, cooperatives having both voice and exit inbuilt into the system should be more effective in preference articulation (and recuperation) than either one of the extremes, the purely political organization or the pure market system.

4.2. Cooperatives with respect to markets and hierarchies

The cooperative is a special kind of transaction and coordination mode. The members of the cooperative, who, in principle, rule the cooperative, have a relationship with it which is close to integration, at least as a group. Thus, the cooperative has obligations toward its members. But the obligation is not reciprocal. The cooperative usually has no authority that it can exercise over its members (Rhodes 1985). This means that it is not a question of vertical integration between member firms and the cooperative. Nor is the cooperative a mode of horizontal integration – although a bargaining cooperative may be close to it. The member firms are independently owned, represent independent profit centers and act independently, except when they have agreed on the joint ownership of the cooperative's firm(s) or have negotiated agreements to act collectively (Shaffer 1986).

The cooperative has, in a way, markets and hierarchies within the same organization. Transactions between the cooperative and its members are internalized, but the members are still allowed to make market transactions. Figure 9 describes this dual feature of the cooperative as a coordinating institution.

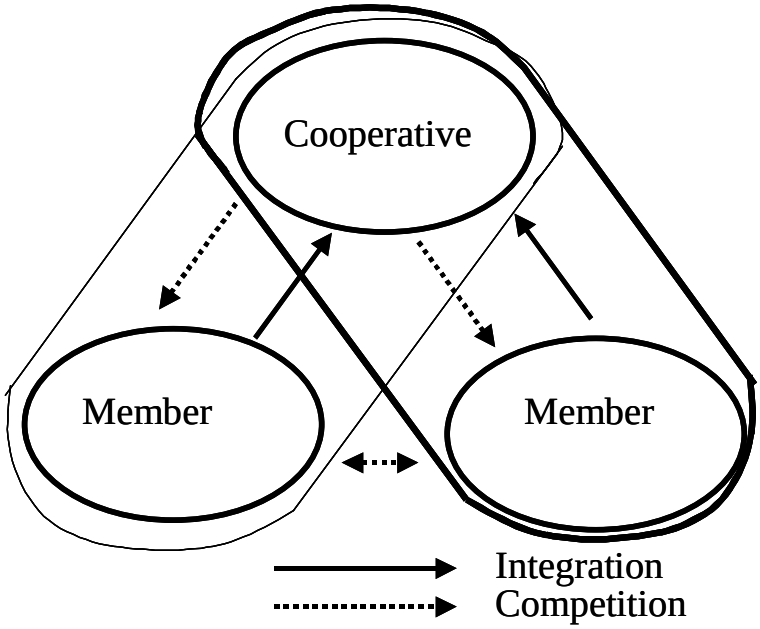

Figure 9: The cooperative's dual role as a coordinating institution.

Cooperatives as transaction mechanisms have properties similar to both modes of transactions discussed above. Which one is prevailing, depends on the rules of the cooperative.

The cooperatives are organizations which have internalized transactions between a member and the organization. The members are, however, independent of each

other. Thus, it is possible to reduce the transaction costs and uncertainty through the cooperative and maintain the entrepreneurial incentives through the market at the same time. According to Shaffer and Staatz (1985, p.56), "the cooperative has a good deal of potential flexibility as a coordinating institution".

There are also problems involved with cooperative organizations, especially concerning micro-micro coordination. The more dominant a cooperative is in a market, the greater the scope for it to use its coordinating potential effectively. If the market is large, the cooperative is more effective if it is large as well. Large cooperatives face the same kind of bureaucratic problems as other large organizations. The potential for opportunism moves inside the organization. As operations become more complex, the impact of bounded rationality and information impactedness may shift the power to the hired managers. When the number of members increases, the heterogeneity of the members' goals also increases. In addition, the relative position of an individual member decreases. To prevent such problems from becoming even more serious than in investor-owned firms (IOF's), the rules of representation are extremely important.

Although profit maximization as a goal is much criticized (Baumol 1959, p.10, Lanzilotti 1958, p.129, Williamson, 1964, p.32), the performance appraisal in IOF's seems to be much more unambiguous than in cooperatives. Often the performance measures of IOF's such as profit, when used in a cooperative do not, in principle, tell anything about the performance of the cooperative. If profits are created, members can complain about deferred patronage refunds. If losses are created, they can be explained by excessive patronage refunds.

Let us think, e.g., about a dairy cooperative whose members make a collective decision to "provide home" for all the milk produced by the members. Instead of maximizing profits by restricting the intake of raw milk, the cooperative performs well by receiving all the milk, although this leads to sub-optimal economic performance. Dairy cooperative systems have sometimes been almost discontinued because of this kind of uncertainty.

According to Henzlerr (1967), the meaning of cooperative is to "advance the welfare of its members". Kuhn (1972) asks what the "advance of welfare" is. How is it measured? With welfare units? He concludes that this measure is not operational and, thus, cannot advance cooperative theory.

Kuhn states that, literally taken, the purpose of a cooperative is to continuously maximize the profits of the members' economies. But the cooperative has to be an independent competitive unit as well. Therefore, according to Fleischman (1972), "the long-run increase of sales volume of the cooperative is used as a substitute measure. If during a certain year the sales volume of a cooperative is more than that of its private competitors and if the cooperative has earned profits that allow it to continue at the same rate, one can conclude that the cooperative has provided its members better service than have other firms."

If there are two firms operating in the same manner, of which the other is an IOF and the other a cooperative, the IOF has to pay interest to its (third-party) owners, while the cooperative is able to transfer it as improved services to members. Thus, if an IOF and a cooperative are operating at the same efficiency, the cooperative should be a more competitive alternative for its members.

There are no reliable and operational measures for appraising the performance of cooperatives that take into account their special features. "Research on the performance criteria from members', management's and society's points of view is perhaps one of the most important but still neglected topics in cooperative research ..." (Ollila 1985, p.126). This problem affects other problems that concern cooperatives, e.g., member influence, recuperation, operational efficiency, etc.

4.3. Cooperatives in the light of transaction cost economics

Cooperatives have been very dominating in many marketing systems, especially in the economic activities connected with agriculture. Transaction cost economics states that there has to be a reason for this rise of cooperatives in agriculture. Cooperatives have somehow been able to reduce transaction costs and been more efficient than other organizational arrangements in the fields where they have operated.

Brief explanations for this as provided by TRC are given below.

Cooperatives have potential to economize the asset-fixity problem without losing all the high-powered incentives. Since the owners of a cooperative are also the customers, the cooperative has no incentive to act opportunistically towards them.

Members of the cooperative gain market power by joining together. This market power is likely to prevent trading partners further in the chain from acting opportunistically against the cooperative and its members. The "competitive yardstick" feature (Nourse 1922) also disciplines other firms competing with the cooperative from acting opportunistically.

In addition to gaining market power, cooperative members gain economies of scale by together buying services such as marketing, product development and processing as well as expertise. The hierarchical decomposition of tasks allows the members to concentrate on tasks closest to their own expertise.

The increase in size of the economic entity tends to decrease the uncertainty about sales and price fluctuations as well. The larger size makes it easier to resist drastic fluctuations in price. The residual claim feature of the cooperative is likely to prevent temporary variations within the patronage refund period. The risk of unpredicted events is pooled among the members.

The cooperative is also a special kind of exchange institution for economizing the frequency of transactions. Instead of recurrent bargaining, members making a contract with the cooperative may allow the cooperative to bargain collectively.

4.4. Cooperatives and the dimensions of transactions

The properties of cooperatives will be discussed below according to the dimensions of transactions and the principles of organizational design presented in Chapter 2.4. Co-operatives will be examined in the light of (l) asset-specificity, (2) uncertainty, (3) externalities, (4) hierarchical decomposition, and (5) frequency of transactions[10].

10 A similar categorization is used by Staatz. (1984).

4.4.1 Asset specificity

Cooperatives and market power

According to Shaffer (1986), the cooperative mode of coordination is particularly adapted to deal with the problem of asset-specificity. Effective coordination through the market is difficult because of uncertainties and potential for opportunism. Coordination within the hierarchy, inside a firm, may involve large investments such as vertical integration to farming in order to protect transaction-specific investments. The effects of bureaucracy may grow enormously.

Cooperatives have a potential of decreas-ing the uncertainty related to transaction specific assets, while simultaneously maintaining "market-like" incentives (Williamson 1985).

Scholars such as Galbraith (ref.) argue that organizations typically fry to decrease uncertainty by gaining market power. In the presentation of the theory of contestable markets, Baumol (1982) argues that the immobility of assets, rather than industry concentration per se, allows the exercise of market power. The absence of transaction specific assets would lead to perfect competition because of costless entry into and exit from an industry, even when there are only a few firms in the industry at a time.

Baumol, Panzar and Willig (1982) stress that in order for market power to arise, assets must be immobile on both sides of the market. Even if a farmer had transaction specific assets, this would not be enough for his trading partners to collect transactional rents if his assets were entirely mobile (costless entry and exit of competitors). As Staatz (1984) puts it:

> "In other words, asset-fixity in farming creates the potential for farmers' trading partners to earn rents by exercising market power, and the asset-fixity in the marketing and farm supply industries allows the trading partners to exploit that potential."

Cooperatives can be efficient in preventing the opportunistic behavior of actors in markets having transaction specific assets on both sides of the market. This may be a partial explanation to the observation that cooperatives in subsectors such as milk production (highly transaction-specific assets on both sides: on the farm and in the dairy plant) seem to be more successful than those in sub-sectors such as potato and fresh cabbage growing (high asset-specificity only on the production side).

Probably the most visible reason for the establishment of farmers' cooperatives has been the need to create a countervailing power in order to equalize the uneven negotiation positions between small, sparsely located farmers with high asset-specificity and large, well-informed merchants (Gebhard 1916).

Staatz (1984, p. 171) considers farmers to have basically two ways of exercising countervailing power to increase their incomes, which he sees as obviously the most important reason to form cooperatives. These two ways are: (l) redistributing the existing income in the farmers' favor, and (2) increasing the efficiency of the economic system. Staatz continues:

"Advocates of collective action by farmers have long argued that markets in which farmers face highly concentrated input, marketing, and processing industries generate a fundamentally unjust distribution of income, both in terms of the income received by farmers as a whole compared to other participants in the economy and in terms of the inequality of incomes among farmers that results from merchants playing one farmer off against another."

In Finland, where family farms and the principle of self-sufficiency have been dominating, the impact of opportunistic behavior of merchants has probably been the major reason for the establishment of cooperatives. Small family farms needed a countervailing power against, e.g., merchants who bought grain from the indebted farmers in need of money for a cheap price in the fall and resold the same grain in the spring at twice the price (Alanen 1964, p. 201). The customary practice of self-sufficiency according to which selling of butter was considered "a shame on the house" (Alanen 1964, p. 202), made Finnish farmers inexperienced for an exchange economy. The cooperatives' role as a mode of collective action was much more important than at present, when the Farmers' Union has adopted a significant part of this function (Ollila 1985). The rural people's ability to act collectively, which has been significantly contributed to the development of cooperatives, still plays a very important part when rural people demand governmental support for their actions.

Staatz also reports that cooperatives have a role in counteracting an undesirable regional distribution of income. The investments of IOF's[11] come from metropolitan financial centers and the profits return to these places. Cooperatives rebate net margins to patrons or invest them locally (Ollila 1985), which leads to higher local multiplier effects.

Besides the impact of the cooperatives' countervailing power on income redistribution, also some sociological effects can be found. The diminishing population of the farming communities seems to view cooperatives as a means of feeling togetherness in a society ruled by the urban majority.

Some transaction specific assets may require a large threshold payment (lumpy inputs). Cooperatives may gather enough members together to enable a joint investment. E.g., vegetable growers may build a cooled storage together as a cooperative. If the storage were an IOF, the possibility for opportunistic behavior at vegetable harvesting time when the need for storage is most urgent would cause uncertainty.

Entry/exit barriers

Entry barriers are often related to economies of scale. Large investments require resources that exceed the scope of small units. A cooperative reduces entry barriers.

According to Porter (1980, p. 22), substantial economies of scale are usually associated with specialized assets, which increase exit barriers. In a cooperative, exit may take place sequentially and the use of transaction-specific assets can thus be prolonged.

11 IOF is an appreviation from Investor-Owned Firm.

Personal relationship and trust

Personal relationships have been traditionally considered as negative in a theoretical economic market. In a market where standardized goods are sold, e.g., on an auction basis, discrimination among persons involved in bidding distorts the perfect market ideal. However, in transactions where all the characteristics of the goods are not observable or where uncertainty is high and where, thus, contracts are incomplete, personal trust can be a very effective function of coordination. Trust reduces transaction costs. In a modern economy, complex transactions develop communication economies to decrease transaction costs. Transaction-specific skills and languages develop, and personal and institutional trust relations evolve. Williamson (1979) calls this idiosyncratic contracting. Shaffer states that relational contracting, especially, relies on trust.

Cooperatives were born to fight for honest trade and trust between themselves and their members (Gebhard 1916). Personal relationships between members and management were inbuilt into cooperatives because of member influence through political processes.

The potential to use trust and personal relations to improve coordination is probably a central problem in large cooperative organizations. Despite the weakening of individual members' voice, a cooperative organization is open to opportunistic behavior as well. The likelihood for opportunism can sometimes be even higher than in lOF's because of poor control and inadequate measures of a cooperative organization's performance.

Preservation of market options

One of the most often heard arguments supporting cooperatives has been the fact that they promise to guarantee a market for the products also during seasons of low demand. With such a promise it pays the members to make a transaction even on less favorable terms compared to the cooperative's competitors.

This kind of warranty is understandably very important to farmers with a high degree of asset-specificity. E.g., a farmer who invests in a dairy operation might be in a very risky situation for 15-20 years with his amortization if there was no guarantee for product demand.[12]

Among the reasons for why cooperatives are better suitable than IOF's to preserve market options are:

(1) A processing cooperative is able to adjust the producer price afterwards using patronage refunds, if prices are volatile also on the next level, whereas an IOF would attempt to pass the risk to producers.
(2) In declining markets a cooperative will help producers to look for alternative ways of marketing the fluctuating levels of production, whereas a processing IOF has to consider other product lines of its business as well as other investment possibilities.

12 Staatz (1984, pp. 294—298) confirms thai this kind of rule does not solve the problem of coordination but transfers the problem to the farmers whose marginal costs are high, benefiting simultaneously low marginal cost producers.

4.4.2 Uncertainty

Flexibility of prices

Shaffer (1986) states that the relative flexibility or stickiness of prices is a critical factor in coordination, and involves complex relationships. Planning is based on projected prices and, thus, the plans in an uncertain world are seldom fulfilled[13]. In food production where yields, production plans of competitors, demand, etc., are not easily predictable, planning may be especially difficult.

If prices are transaction specific (but the environment is still unpredictable), price flexibility cannot be used to direct the already produced products to their best possible uses. Thus, if the predictability of market conditions increases, allocative efficiency decreases. Governmental attempts to influence the functioning of the marketing system have provided incentives to behavior otherwise uneconomical, causing a slack in the economic system. E.g., the taxation practices of Finnish farms have been said to lead to uneconomical over-mechanization and preference for new machines over used ones.

Cooperatives have a certain limited capacity to guarantee forward prices since they have potential to influence production plans through information provided to members and contracting with members, and simultaneously to influence downstream participants through collective bargaining, contracting and promotion. If cooperatives represent a significant proportion of a particular market, this could improve the match of aggregate production with demand and at the same time maintain a "workable" price stability and coordination.

The contingency pricing system of cooperatives, according to which members receive, nor just the initial price, but also a patronage refund depending on the earnings of the cooperative, also has a price stabilizing effect in uncertain circumstances. The advantages of contingency pricing mentioned by Staatz (1984, p. 188) are that it helps firms on both sides of the market to avoid the costly mistakes of committing themselves to prices that are either too low or too high in the light of changing and not-fully-known supply and demand conditions. However, it may also render costly renegotiations of contracts in situations where one party feels that it has been treated unfairly in evolving market conditions.

Point of time in the production-distribution sequence at which terms are determined

Predictable terms of trade facilitate planning and coordination. Errors in expectations when preparing plans of activities cause a misallocation of resources. "The length of the contract relative to the production planning is critical. For example, contracts for hogs longer than the gestation period would reduce errors in planning the number of hogs to breed, but would not solve the problem of planning investments in confinement housing, which might have a useful life of 20 years." (Shaf-

13 To correct an incorrect plan may require much more "political energy" than was required to make the corresponding decision about the incorrect goals. This can cause incorrect action even in a situation where more correct information would be available. (Ollila 1987).

fer 1986). A 20-year contract would cause difficult problems in changed market conditions, especially for the buyer.

The food system, in most cases, has several features that are either beyond the control of the parties or that occur in too short a time to be able to contribute to planning. Cooperatives offer their members a contract, which is more like a contingency agreement with an obligation to deliver the members' goods (to provide a certain service) but with the price depending on the performance of the cooperative. Thus, a cooperative can reduce the uncertainty of investments made in advance (transaction specific assets) by guaranteeing a market less open to opportunistic behavior than what an IOF could offer. The cooperative pooling agreement may reduce price variability but still maintain some dynamics in the system, which would be much more difficult to achieve, e.g., by a governmental agreement.

If the cooperative were capable of attracting a significant proportion of the producers of a particular commodity, it would also reduce the uncertainty of the nonpatrons of the cooperative. Because such agreements would necessarily involve contingencies difficult to specify in detail in advance, it would require either very complex contracts or great trust between the parties. It may be assumed that the trust between a member and a cooperative would be deeper than between two independent firms with differing goals encouraging them to act opportunistically.

Thin markets

In a thin market it is a question about the representativeness of the market and the ability of the market to absorb variations in deliveries.

An open auction market or exchange can be characterized as thin if only a small part of transactions occur through this institution and a significant proportion is**,** e.g., private treaty transactions. In this case the market functions with information about demand and supply, which may be insufficient. The variations in the quantities sold through the market institution may cause price variations unrelated to the actual total volume marketed.

As example of markets with a limited capacity to absorb the day-to-day variations in quantities delivered, Shaffer mentions city markets for perishable fruits and vegetables. In such markets two or three loads too many of a particular commodity delivered on a particular day may result in prices below the cost of transporting the commodity to the market. The prices in the vegetable terminal market in Finland can be very volatile and unpredictable. E.g., in the summer the price of cucumber or tomato may sometimes be only a fraction of the production costs[14].

Cooperatives could help to provide information about private treaty transactions. Because owned by members, cooperatives would be in a better position than either private lOFs or the government to gain reliable information about private treaty transactions. The dual role of cooperatives (see section 4.2.) makes it possible to affect the members' intentions as well. Therefore, there would be an opportunity for an iterative process of action and transaction coordination to smoothen the flow of products and the fluctuation of prices in changing market circumstances. The prob-

14 Consumers have a hard time understanding that the quality of vegetables can be the best when their prices are the lowest.

lem would be to gain a large enough market share for sufficient influence in the market. Avoiding the problem of free riders might also be difficult.

Risk reduction through pooling

High seasonal fluctuations of production cause an unstable flow of income to farmers. The increasing specialization of farmers raises uncertainty either because of "having put all the eggs into one basket" or because of the chance for opportunism caused by short peak loads. The increasing amount of purchased inputs may deepen the problem.

Uncertainty has been the main reason leading to the administered price formation of the most of the traditional farm products in Finland. It has often been argued been that administered prices have distorted the incentive structure causing a need for readjustments in Finnish agriculture.

Other means of coping with uncertainty have been on-farm diversification and, as in the U.S., futures markets. Pooling through cooperatives may be especially relevant in economies where futures market or similar institutions are poorly developed. A stronger impact of administered prices may become an increasing solution for uncertainty in almost all European countries.

Staatz (1984, p. 190) mentions three reasons for farmers pooling through cooperatives. First, the uncertainties related to agricultural production may be so great that lenders will require a large risk premium when loaning to farmers, particularly if the purpose of the loan is simply to stabilize farm income.[15] Secondly, pooling may involve less transaction costs than other forms of insurance. The decision to use a cooperative for this purpose may not require more than one decision, i.e., to join in. Thirdly, a farmer in declining markets may see a chance to transfer some of the income of producers of more favorable crops through a cooperative to himself. Staatz further discusses the properties of cooperatives as institutions where winners chronically support losers and where, thus, members insure themselves with "other people's money".

Transparency

The transparency of a market refers to the extent to which the terms of all transactions are open to all participants in the market. Transparency to those not present in the open auction market is dependent on the accuracy and extent of market news reporting. Posted price markets are transparent, but appearance may be deceptive if individual deals are negotiated or if quantities are uncertain. The absence of transparency hinders coordination, increasing transaction costs, uncertainty and errors in resource allocation.

Cooperatives may improve transparency by providing information that would otherwise be insufficient. Cooperatives may be used to counteract the lack of open information in private treaty markets. In cases when private treaty markets involve complex and incomparable contracts, cooperatives could provide, not only infor-

15 In Finland, forest income has traditionally been the balancing factor in farming, either as direct income or as a bond for gelling loans. Reliance on forests has, however, decreased, e.g. because forests have often been separated from the farms to other children than the one who inherits the farm.

mation on contract terms and legal advice, but also standardized contracts. According to Shaffer, improved information may be one of the most important outcomes of bargaining, contributing to more effective coordination.

Specification

Specification coordination refers to the extent to which the characteristics of a product or service transferred through the market are known to the parties, and the extent to which preferences concerning these characteristics and the costs of obtaining particular characteristics are communicated between potential participants in the market.

Thinking of a product or service as a "utility bundle" describes the large number of characteristics involved, whose value varies in different uses and among different users (Ollila 1986). The combination of the characteristics incorporated in a product affects its cost. Characteristics without value in a particular use create unnecessary costs. The number of products produced by a particular producer affects the scale economies of production. "Matching characteristics produced with consumer preferences is a horrendous problem fraught with uncertainty." (Shaffer 1986, p. 17). When all preferences cannot be satisfied with one utility bundle and one bundle satisfying all preferences costs too much, specification is a compromise between these.

> "Spot markets deal in products already produced. Producers selling in these markets have to speculate about not only the bundle of characteristics desired by potential buyers but also about the products likely to be presented by other suppliers which will affect the demand for their products. The market feeds back information to producers in the form of prices in the case of auction markets and the amount of sales at different prices in posted price markets. Auction markets tend to provide more immediate and more discriminating information than posted price markets but in both cases the quality of information is very limited and uncertain. To which of the many characteristics were the buyers responding?[16]. Was the price or the volume of sales related to a particular quality characteristic or to other factors? In spot markets buyers can respond only to product characteristics presented. The response does not reveal preferences for products with different bundles of product characteristics than those presented in the market. Buyers typically have little incentive to communicate information about more desirable characteristics. The buyer does not know the production possibilities for different bundles of characteristics. Some characteristics of products cannot be observed and buyers may purchase based on false expectations, sending false messages across the market. That is, a purchase may be taken as an expression of preference for future products of the same characteristics but may not have such meaning." (Shaffer 1986, p.18).

Communication concerning the different possible and desired characteristics of food products in the complicated modern food marketing system is a major problem. The bureaucracy of the industries participating in the food system may not have incentives to transmit information about the desired product characteristics to

16 The same problem can be found in elections, where each candidate represents a bundle of thoughts only a part of which are explicit.

their suppliers. Rigid governmental statutes supplemented with governmental bureaucracy are likely to hinder the dynamics of the marketing system.

Auction markets are able to deal with already existing characteristics made explicit to the buyers. In private treaty markets the characteristics can be more widely negotiated, but information about the transactions is seldom made explicit to other participants in the market. Posted price markets cannot create price information in the short run. Contracts in a changing environment may either be incomplete or raise the transaction costs significantly. If contracts are standardized, the benefits of information exchange are lost. Thus, no "perfect" transaction institution can be found. However, certain product and environment characteristics are less volatile to distortions, and so the proper design of market institutions can prevent some dysfunctioning.

Cooperatives have two options in creating and collecting information about transactions: (1) they can use market information and let it affect specification (exit), and (2) they also have an option to negotiate the characteristics of transactions (voice). Hirschman states that the voice option, i.e., influence through negotiations (democratic processes in a cooperative), carries more information than the exit option (decision to buy or not to buy). In cooperatives, the market (exit) can be used if the existing characteristics of goods are sufficiently known by the parties. Negotiations (voice) requiring more transaction costs can be used if the potential characteristics of products or transactions are not sufficiently made explicit. Patrons can require the cooperative to collect information on all the possible characteristics for the members. This kind of information collecting and patron education is not possible in lOF's where the benefits of such activities may be captured by rival firms. Cooperative personnel should have fewer incentives to act opportunistically in this case than the personnel of an IOF. The problem of impacted information should, thus, also be smaller in a cooperative.

Cooperatives could carry out joint research about consumer preferences for patrons not able to do this individually. The cost of preventing the benefits of the information gathering from being passed to rivals would be less a problem in cooperatives than in lOFs, because the benefits to the members come mainly through this service and not through the economic profits of the cooperative.

Structure

According to Caves (1982, p. 16) the main elements of a market structure are: (1) seller concentration, (2) production differentiation, (3) barriers to the entry of new firms, (4) buyer concentration, (5) height of fixed costs and barriers to exit, and (6) growth rate of market demand. Shaffer (1986, p. 28) states that structure is a market characteristic of importance to coordination performance because it is associated with market power or capacity to influence terms of trade and trading relationships. Market structure not only influences coordination but is also influenced by the nature of the coordination problem, as firms seek to reduce or mitigate the consequences of uncertainty.

Large firms try to reduce the uncertainty related to large investments and transaction-specific assets with planning, administered prices, gaining market power by large market shares, and securing demand by sales promotion efforts (Galbraith

1967). Large firms are necessarily bureaucratic, which – when combined 'with all the efforts to protect against uncertainty – leads to very sticky prices for their products, especially on the down side. This improves the predictability of the planning sector's own prices and leads to contractual arrangements facilitating private treaty markets. Private treaty markets can be rich in information and, thus, improve coordination. When sub-sectors dominated by planning hierarchies are supplemented by posted price retail markets, this may be a hindrance to the adaptation coordination of upstream firms, e.g., agricultural producers in food marketing systems. Shaffer states that this kind of situation is also very risky for new entrants even if the prices are attractive, because of the potential response of large firms designed to protect their market share.

Large planning sector firms can contribute to the coordination of markets by stabilizing them. But at the same time market sector firms, acting in an atomistic market as price takers, may be forced to take on more of the burden of adjustment than what would be their "fair share". This kind of situation can be easily imagined in relations between a farm and the food industry. Thus, in markets consisting of both a few large planning sector firms and many firms coordinated by atomistic markets, the added uncertainty, volatility of prices, and troubles in adjustment become the problems of the small atomistic firms (farms).

Cooperatives may reduce the concentration of markets. The establishment of a cooperative, or even a threat of it, may change the behavior of concentrated markets, contributing to improved coordination. The properties of cooperatives as a "competitive yardstick" as presented by Nourse (1922) are well documented, e.g., in the Finnish agricultural history of this century. According to Shaffer (1986, p. 31), this also suggests that cooperatives have advantages as a coordinating mode in oligopolistic markets. .

The members of a cooperative (farmers) can use similar sales promotion activities, e.g. advertising, as large planning sector organizations in reducing the uncertainty in the demand of their products. This would be economically impossible for individual farmers, as would be the prevention of the benefits from going to others. Cooperatives are able to reduce this kind of free-rider problem.

Contingencies and settlement

Either promises or rights to goods or services are traded. Uncertainty is present in all transactions. Some features of the goods may be unknown or, if a forward contract is in question, the future circumstances are uncertain. Efficient coordination across markets requires a definition of the contingencies in a process for settling, in case of a failure to meet the terms of the promise.

Williamson (1979) categorizes contracts in transactions as follows:

(1) If information considering the transaction in question is perfect and all the contingencies made explicit, it is a question about classical contracting.
(2) If the authority of settlement of disputes is given to a third party, it is a question about neoclassical contracting.
(3) In complex transactions the development of transaction-specific administration brings a third kind of contracting, i.e., relational contracting.

"In a spot market the time between transaction and delivery is short and the promise is to deliver the product as it appears to be. Of course, not all the product characteristics are observable. There is, for example, a promise that a fertilizer or pesticide is formulated according to description. There may be an implied warranty that if the product is not as represented, damages may be due. But costs of settlement may be high." (Shaffer 1986, p.21).

The case above represents classical contracting. If a third party is authorized to inspect the product before delivery, it is a question of neoclassical contracting. If the period between contract and delivery is long, more and more changes in the environment may take place. The price of oil may raise causing problems in meeting the agreed price, the need for a particular pesticide may disappear because of improved products available, etc. If it is possible to reach such a relational contract, it may be a very effective means of coordination. Negotiations about all the possible contingencies in a situation of uncertainty may be very difficult, time-consuming and expensive.

Cooperatives' transactions with members are contingent upon the performance of the cooperative. Despite temporary pricing, the final price depends on the cooperative's performance. The contingent nature of transactions between members and their cooperative differentiates them from both usual market transactions and firms' internal transactions. In market, transactions, uncertainty about the future price of the finished product, e.g., is the buyer's risk regardless of whether the transaction takes place in an auction or posted price market. In a cooperative the risk remains with the members, and the distribution of its effects depends on the rules (SOP's) of the cooperative. The members of a cooperative may have other opening options for transactions as well. This feature makes the transactions between a cooperative and its members different from firms' internal transactions. Shaffer (1986, p. 22) finds characteristics of relational contracting in transactions between a cooperative and its members, and suggests a comparison of cooperative with relational contracting to be instructive.

The special properties of cooperative transactions may have potential to improve coordination by affecting the division of contingencies of uncertainty. A member's delivery contract with the cooperative may function as "hedging" the risk of uncertainty. The division of the causes of uncertainty may be divided among the members (according to the SOP's) and, thus, their effects may be softened. SHAFFER suspects that failing to have more explicit contracts with members misses these kinds of opportunities to improve coordination.

A system with supply agreements between a cooperative and its members supplemented with relational contracting with buyers (processors) might replace the rigid governmental coordination while maintaining some incentives to adaptation coordination.

4.4.3 Externalities

Cooperatives have potential to deal with some of the externality problems. They could lower the social fences (Platt 1973) preventing the inspection of all the products and, thus, benefit all growers. Cooperatives could promote goods in cases where the costs for individual payers exceed the benefits because of externalities.

Externalities are created when a transaction incurs costs or benefits to third parties not involved in a transaction (free or unwilling riders). Externalities pose a significant problem in the coordination of supply with demand, especially in the farm commodity sub-sector. Shaffer mentions an example where an individual farmer raises the production of a commodity with inelastic demand, thereby reducing the revenue of other farmers. This might not be a matter of social concern if the farmers increasing their production were simply more efficient than other farmers and, in fact, the marginal revenue from the increased production exceeded the marginal costs. But what if the increased production was based upon false expectations regarding prices, and the marginal revenue turns out to be less than the marginal cost? All farmers will suffer the consequences of the mistakes.

Public and non-marketable goods

One of the most interesting features of cooperatives is their ability to exchange both incompatible use and joint impact (public) goods[17]. Besides incompatible use goods such as a tractor, cooperative members may decide to organize training in maintenance, efficient use, etc., without the fear of an IOF that the targets of that investment are using the knowledge to benefit the competitor.

According to Staatz (1984, p. 195), many of the "competitive yardstick" features of farmer cooperatives can be viewed as public goods. Farmers who feel that existing firms are not providing satisfactory services may establish a cooperative, which, in turn, may force the IOF's to improve their services because of competition. The non-member farmers are also able to benefit from the improved efficiency of the market[18].

Staatz states that no independent IOF has an incentive to act as a "competitive yardstick", although the logic of a competitive market may force it to similar behavior. The market cannot channel the benefit from such behavior to the actor.

The cooperative principle of open membership is a powerful tool for preventing the negative effects of certain kinds of externalities. E.g., standardization can lower both transaction and production costs significantly. If standards are created through competition, a great deal of resources will be wasted before the winner has established its position[19].

Because of open membership, monopoly power cannot be created. Creating such power is even more difficult because of the common collective decision that, e.g., a farmer cooperative has the obligation to buy all the specified products the farmer has produced (but the farmer does not have to sell all to the cooperative). In this

17 By incompatible use goods are meant goods with no exclusion costs. Joint impact goods (public goods) are goods with exclusion costs leading to free-rider problems

18 There is an incentive for some farmers to ride free, i.e., to obtain the benefits without having to share the cost of cooperation. On the other hand, if the proportion of non-members compared to members becomes loo small, there is a possibility that the market signals of the cooperative become unrepresentative.

19 In Finland the leading credit card firm representing Visa, OK and Eurocard is a cooperative called Luottokunta. Mr. Tapiovaara, the vice president of Luottokunta, sees that the cooperative form with its open membership has been the major reason that Finland in 80’s had only a maximum of 60-70 different credit card systems compared to nearly 200 in Sweden. After great confusion, a bitter drop-off tight begun in Sweden in order to reduce the number of cards.

kind of a situation, monopoly power through restricting the supply cannot be created[20].

Exclusion costs become relevant if there is no effective way to prevent the utility from being utilized also by the person's dot paying the full cost (externalities). Exclusion costs are usually high with joint impact goods (that do not wear out with use: TV or computer programs, education, etc.) (Schmid 1978).

The problem of free riders starts if the prevention of non-payers from utilizing a good cannot be arranged. E.g., let us suppose that it is advantageous to educate dairy farmers to produce the best possible milk for quality cheese. If an IOF invests in the education of its milk producers, it may happen that after the farmers have been educated nothing prevents them from acting opportunistically and starting to deliver their milk to the competitor firm, which can pay as much more as the other one has invested in producer education. If a cooperative educates its farmers, this kind of opportunistic behavior is not as likely, because: (1) the profit from the improved quality of cheese comes collectively to the producers (and, on the other hand, even one farmer under certain circumstances is able to spoil the others' production as well), (2) the paid patronage fee and expectations of increased patronage refunds because of improved quality increase the cost of exit, (3) loyalty is usually greater to the member's own cooperative than to a regular business partner, and (4) since the cooperative has collectively made a decision it is less likely that this decision will be cancelled for the reasons an IOF operator would suspect.

Open membership together with collective action has probably been the main reasons why cooperatives have performed very well in correcting market failures (Rhodes 1985). Through collective action, small units have gained economies of scale and market power. Scale economies have been realized in joint processing operations, collective buying, information systems, hiring expertise for marketing, etc. Market power has been used to balance the negotiation power between small farmers and large companies, lobbying, etc. Organizing transactions between farmers and processors has succeeded better through cooperatives than through vertical integration. Because of problems of control, lack of incentives to flexible labor utilization, etc., even centrally planned economies are looking for means to decrease inefficiencies in basic food production.

Preservation of product quality

The quality of potatoes and vegetables used to be a topic of readers' pages for a couple of years in Finland. The problem can be analyzed as follows: The products of the growers lose their "identity" before reaching the retailer and customer. The growers have no incentive to improve the quality above the minimum at the inspection point; on the contrary, there is an incentive to ride free with other growers' quality image and, when observed by customers, to cause externality costs in the form of a worsened image to all the growers.

20 Even if a cooperative would operate more profitably by restricting the supply, it has performed in the right way by acting according to the members' will. In this kind of situation the performance of a cooperative cannot be measured by micro economic measures (Ollila 1986a).

Deterioration of product quality has been an incentive to firms to integrate vertically. Kirkman (1975) reports product deterioration problems of Californian citrus growers in the early 1900's as the reason for establishing the cooperative California Fruit Growers Exchange, later named Sunkist.

Staatz (1984, p. 194) also mentions the willingness of farmers to integrate vertically on the input side. In new products in which the quality is difficult to examine ex ante (e.g., new pesticides, grain varieties, feed additives), there is a good possibility for opportunistic behavior. Along with the fast development of technology, the ability of an average farmer to be sufficiently informed about all the features of new products is almost impossible. Farmers may together hire specialized personnel to their cooperatives to avoid making decisions based on inadequate information and knowledge.

Brand label

Brand label, an explicit instance of product responsibility, could in some cases improve the consumers' possibilities to use past experience in the purchase decisions of food items. Brand labels could also carry the profit resulting from intentions to satisfy consumer preferences to the actors, as well as the punishment.

The Finnish vegetable industry is been attempting to acquire brand labels for vegetables (Ollila 1987). Processors and distributors have had some difficulties in preserving the quality of vegetables required for a good reputation of the brand name. From a processor's point of view, the cheapest way of preserving product quality is to integrate vertically partly or totally with production similarly as the Finnish Saarioinen Company. Saarioinen either produces its own vegetables or requires special handling practices from producers.

If the farmers profit from the use of a differentiated brand label, establishing a cooperative would offer good possibilities, because a strong, well-known brand name requires a certain volume, which an individual producer is usually unable to produce. Neither is it possible that each individual producer could have a strong brand name of his own without confusing the consumers. A cooperative would also maintain incentives to the members to contribute to the joint profit and it would have the means, either physical or social, to force the unscrupulous members to maintain the quality.

4.4.4 Hierarchical decomposition

Recall Williamson's hierarchical decomposition principle in organizational design:

> "... internal organization should be designed in such a way as to effect quasi-independence between the parts, the high frequency dynamics (operating activities) and low frequency dynamics (strategic planning) should be clearly distinguished, and incentives should be aligned within and between components so as to promote both local and global effectiveness." (Williamson 1981, p. 1550)

Staatz (1984, p. 198) states that with regard to this principle, farmer cooperatives have two potential advantages over IOF's attempting to integrate backwards through contracting direct ownership: (1) decentralization of farm decision making and (2) better flow of information.

Decentralization of farm decision making

A farm-cooperative system is actually a division of activities into "quasi-independent" subsystems, at the same time maintaining high-powered incentives on both sides: at farm level and at cooperative level.

Many of the activities related to farming require a larger scale than an average farm can have. Most of the modern processing and marketing activities are examples of this. Vertical integration of processing firms into farming is not easy, either. Several managerial decisions at farm level are highly time- and site-specific (Staatz 1984, p. 198). Weather conditions, diseases, etc., are issues, which require a certain degree of autonomy from the farm manager. If farm managers were not affected by high-powered incentives, the control problem would also be difficult. It seems to be difficult even on independent farms with hired employees.

Cooperatives provide a means for farming and processing systems to acquire large-scale advantages from certain functions but simultaneously maintaining the required high-powered incentives at farm level. The top management of the cooperative system can concentrate on important strategic questions while assigning part of the day-to-day operations to the member units. The market outside the cooperative still functions as (at least a partial) control system.

Improved market information

The information flow between members and their cooperatives would not be as disposed to opportunism as would be the information flow between two pure trading partners.

The possibility to simultaneously use both the exit and voice options provides better and more representative information about preferences and service specification. When customers having personal experience of the service offered have a legal right to affect the operation of their own cooperative, the specification of needed adjustment coordination decisions could be supposed to be more effective than either in a pure market or in integration where the representativeness of voice is questionable.

Federated v.s. centralized cooperatives

Staatz (1984, pp. 200-202) discusses the properties of federated (second or third degree) and centralized organizational forms of cooperatives in the light of transaction cost economics. According to him, federated cooperatives allow greater farmer involvement in the governance of locals, which in turn can be an advantage in financing the cooperative, in responding to the local needs of members, etc. Centralized cooperatives, on the other hand, can offer certain operational and managerial efficiencies. Staatz mentions advantages in using economies of size, minimizing idle capacity and responding quicker to market needs.

A disadvantage is that federated cooperatives have difficulties in avoiding conflicts among cooperatives with different performance and in managing competition among themselves. Centralized cooperatives, in turn, are susceptible to member alienation and excess power of the professional management.

The question of cooperative structures is very relevant in many countries. Staatz reports that Gold Kist and Southern States, two major agricultural cooperatives in southern U.S., have recently undergone a change to more centralized structure, while a major dairy cooperative in the Great Lakes area, Land O'Lakes, has developed hybrid structures.

A large Finnish meat-processing cooperative has become a holding company for a share company taking care of actual processing. The processing company's shares are also traded in Helsinki Exchange.

Protection against industry take-overs

An increasing money market has brought industry takeovers. A panic in the share markets may change an entire company ownership. Although this may sometimes be a healthy way of changing incompetent management and owners, it causes needless uncertainty. Rapidly growing small firms, especially, are in danger of being purchased by their large competitors, which in turn may lead to an increased concentration of industry. This development has been very visible in the Information Technology industry.

The acquisition of a cooperative involves a considerable amount of transaction costs. In principle, open membership prevailing, it could be possible by having so many new members join the cooperative that it would lead to a majority at the next meeting. But since most cooperatives must take fundamental changes to two subsequent meetings, the take-over is not easy.

4.4.5 Frequency of transactions

> "Uncertainty and the potential for opportunism increase when long-term contracting is needed to facilitate coordination. A participant is disciplined when he depends upon repeated transactions, the dissatisfied customer does not return as long as he has an alternative. In the case of frequent transactions learning takes place and search effort can be spread over a number of transactions. Relational contracting is fostered by repeated transactions." (Shaffer 1986)

Contracts can also cause a fundamental transformation of transactions. After a binding contract has been made involving many bidders ex ante transaction, an ex post transaction may result in a monopoly situation.

Cooperatives can prevent such fundamental transformation. Their relational contract feature can reduce transaction costs but still maintain the members' possibility to make "inquiry buys" from outside (Ollila 1985). Thus, reducing uncertainty by contracting may not necessarily hinder obtaining market information through act-

ing in the market (exit option in Hirschman's terms). This information could be catered by both the members and the cooperative.

"A critical factor promoting cooperation is the fact that a subsequent transaction is expected, If the current transaction is the last, defection is likely. This suggests that cooperative policy that promotes continued patronage by members, including barriers to exit, would discourage opportunistic behavior and facilitate contingency contracting under uncertainty and that such cooperatives might have an advantage over markets in coordinating requiring future delivery agreements." (Shaffer 1986)

Loyalty (Hirschman 1970, pp. 76-105) to a cooperative can be expected to be greater than loyalty to a "strange" independent firm. This may make cooperatives more resistant to short-term difficulties. The sense of loyalty may make it possible for a cooperative to give suggestions about jointly preferable future behavior, e.g., about what and how much to produce.

5. Summary

In a modern economy the end product may consist of hundreds, or even thousands of individual decisions. In the reading above we have understood economics as means of coordinating production and transactions in order to create goods and services. The coordination must happen both inside the certain production system and as well as between the production system and customer preferences.

Economics was understood to be activities between individuals being interdependent on each other. In the environment of scarcity one individual's right was regarded as the others' restriction. Because of the fact that in the economic world of scarcity some individuals may lack some goods and have plenty of others, the exchange of goods can make two individuals better off than before this exchange, a transaction. The transaction, the shift of property rights, was defined as the basic unit of economic analysis. The organization of transactions was stated to have a major influence on the economic performance of the system.

In a modern society the transactions take place in an environment of rules, institutions. Institutions are agreed rules how transactions shall be conducted.

In the traditional economic analysis the system can be altered by changing the price structure. In the institutional economic analysis the system may be altered by changing institution. Thus, through institutions it is possible to affect the outcome of an economic system.

In the traditional economic analysis, in its strict form, the market has been regarded as the only and most efficient mode of conducting transactions. We accepted that argument, but only in circumstances of assumptions such as perfect knowledge, free information, costless transformation of investments and full honesty. If we apart from such circumstances, it was stated that the relative efficiency of the markets starts to decrease. Other types of transaction institutions such as production contracts, Joint Ventures come instead of market transactions. If not even this is functioning, an actor may start to make a good itself. So the market transaction shifts from the market into an organization.

Because of uncertainty, non-free information and transformation of investments into others and because of the possibility of actors behaving unhonestly, transactions create costs. Transaction Cost Theory understands that the total cost of production consists of production and transactions costs, transaction costs being greatly influenced by the institutional structure of the production-transaction sequence.

According to Transaction Cost Theory three dimensions of transactions, asset specifity, uncertainty and frequency explain a great deal about transaction costs created in various institutional arrangements. This assumption was supplemented by externalities defining whose costs will be taken into account as transaction costs.

Transaction Cost Economics believes in a kind of an evolutionary development of institutions and governance structures. In changing circumstances some institutional arrangements either get and increasing need for changes of become obsolete and must be abandoned. What exists and survives, must be efficient!

The common opinion is that cooperative enterprises have very little to give in the modern economy. However, in 2001 more than 60 per cent of world's food production and processing go through cooperatives. In Europe alone, there are more than 120 000 cooperatives having 83 million members. According to Transaction Cost Economics there has to be a transaction cost explanation to the existence of cooperatives.

Numerous reasons for the cooperatives being superior to either market transactions or internal transactions are presented. The reasons do not tell that cooperatives would be superior in all kinds of transactions. However, it is demonstrated that there are transactions where a cooperative may be a superior solution.

So, instead of the present trend of gaining cooperatives' competitive edge through imitating Investor Owned Firms, cooperatives have a lot of potential to increase their competitiveness though their own characteristics. This writing hopefully demonstrates ways for finding such competitive properties.

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